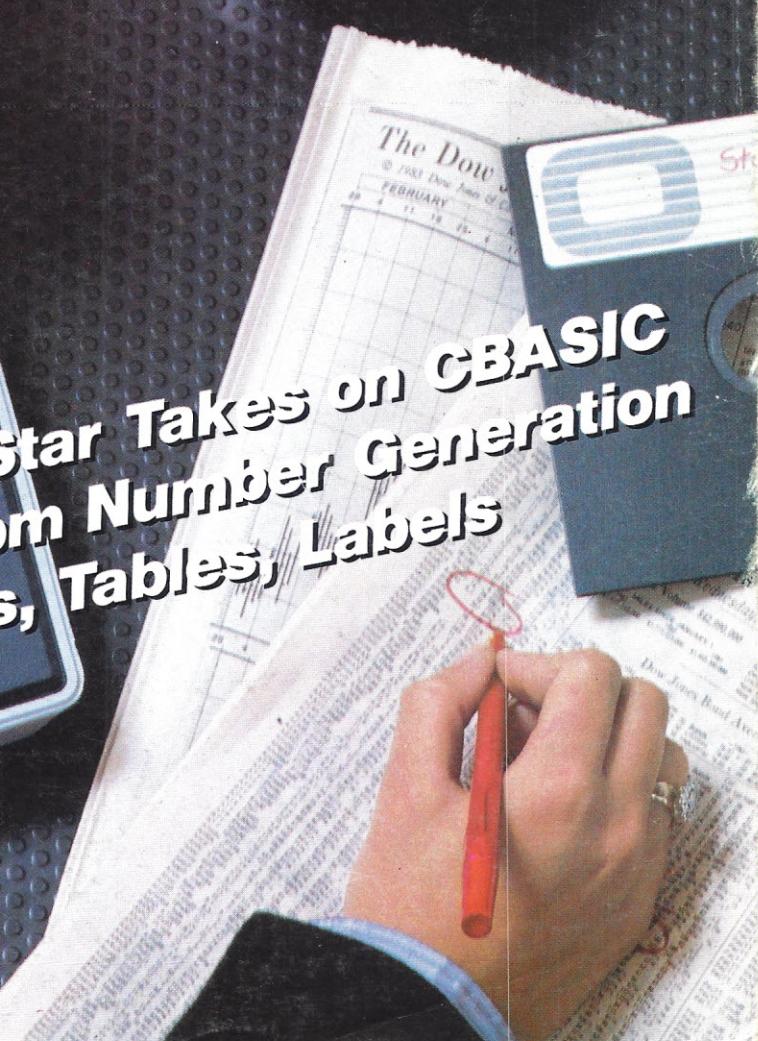
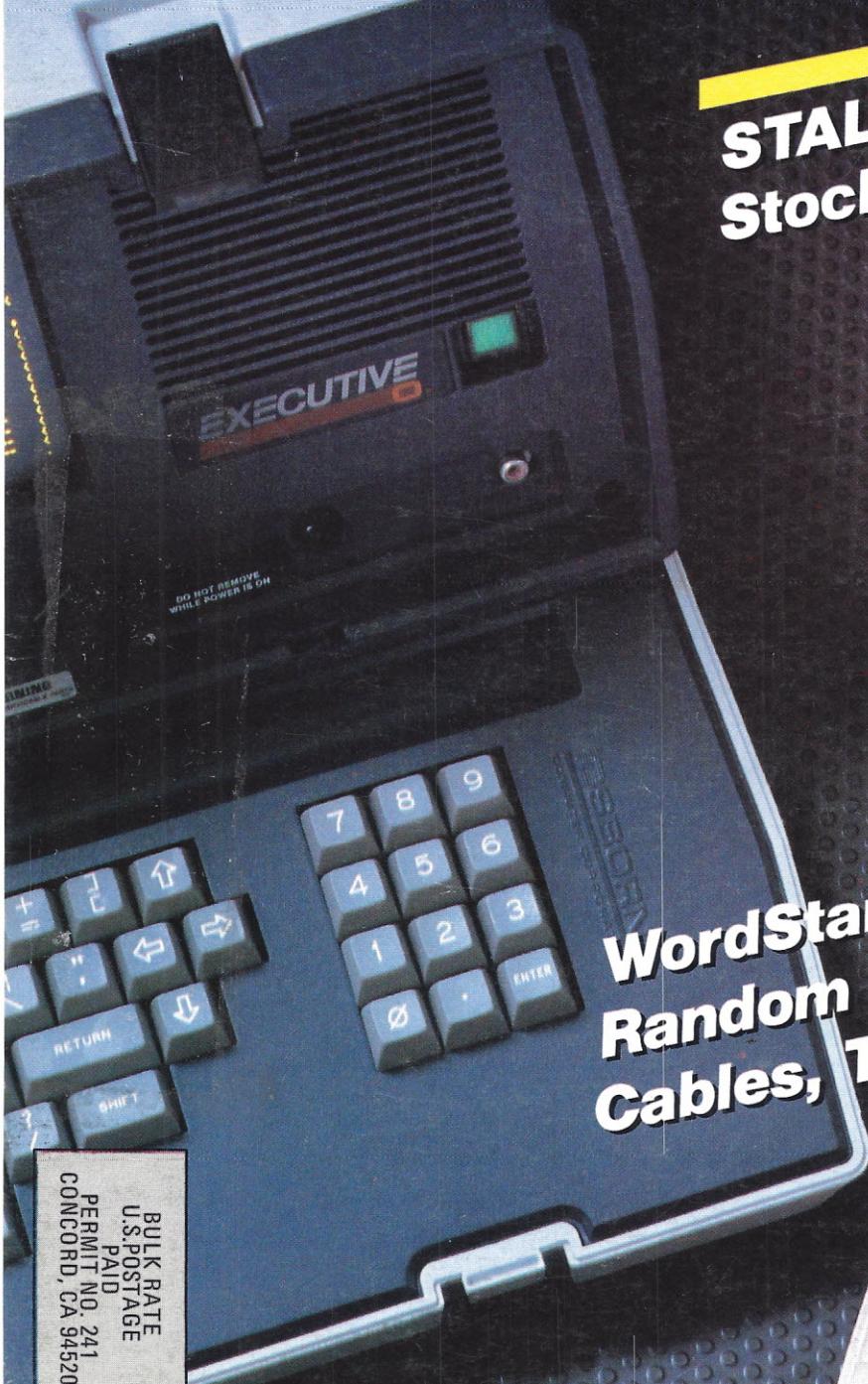


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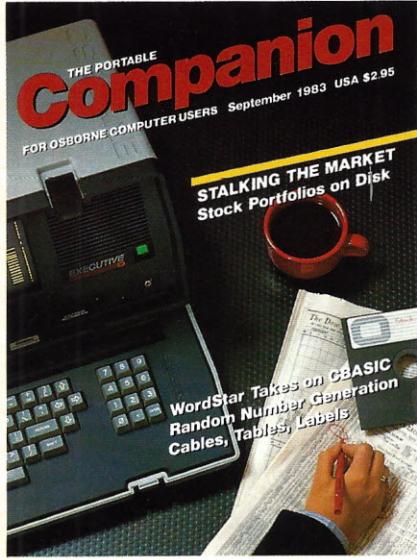
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THE PORTABLE Companion

FOR OSBORNE COMPUTER USERS

SEPTEMBER Vol 2 No 4



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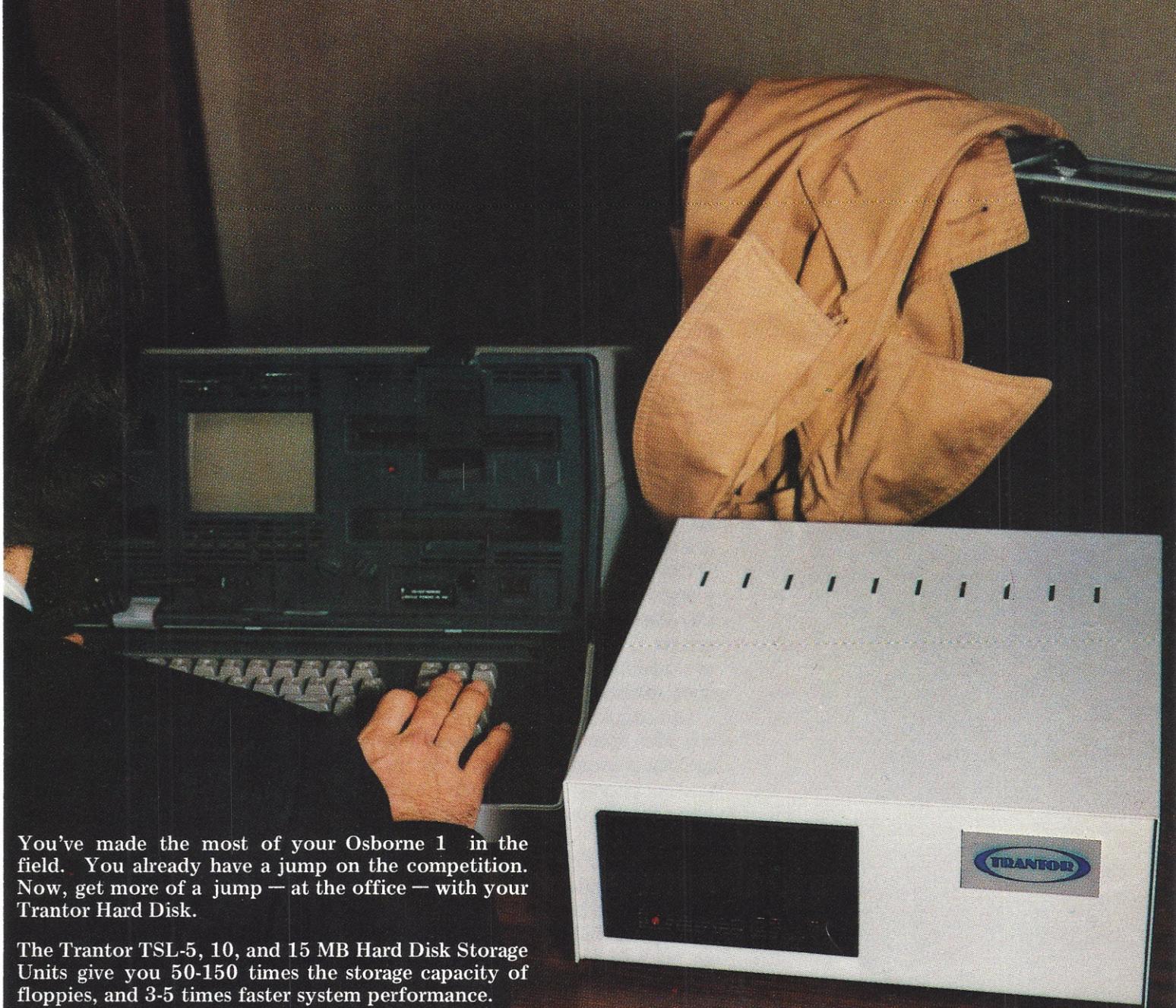
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From the backroom

I get my best ideas during a full moon. We also get the strangest phone calls and letters from readers on a cyclical basis, expressing their frustrations and/or delight with their computer and asking for a personal reply to their problem.

It dawned on me after a recent call that most of our readers probably have only the vaguest idea of what goes on behind the door of the *Companion*. A peek inside may solve many a miscommunication.

With the addition of our new assistant editor, Denise "Groovy Unit" Caruso, our editorial staff now boasts three. A committed bunch, we nevertheless have our human limitations. So when a caller gets a quick "Sorry, we don't answer technical questions" and is transferred to OCC's technical support division, it isn't because we're heartless or callous but is a response to the ever-looming monthly deadlines.

Our minuscule staff is also the reason we rely on our readers to supply many of the excellent articles, reviews and short-cuts we receive each day. We owe a large measure of our success to this type of active participation. If you've been harboring an idea, write it up and send it in. Writer's guidelines are available at the drop of a post card to: Writer's Guidelines: 26538 Danti Court, Mailbox 22, Hayward, CA 94545.

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Thanks for listening.

Jackie Rae
Editor

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Letters

Program ally

Let me first say that owning an Osborne 1 has been one of the most stimulating and educational events of my life. It has proved to be an excellent learning platform as well as a workhorse in my psychological practice.

I am writing in response to Doug Hurst's article in the Feb/Mar issue. I had stumbled on the same possibilities for the DDT utility, but there is one detail in Mr. Hurst's presentation which may cause some problems.

First we must note that the section of AUTOST.COM that we are working with is the clever little bit that fools the CCP into thinking it is receiving a command from the console, when in actuality it is the program "sending the message." The CCP uses the command line function in CP/M (function #10), and a quick perusal of the parameters for this function illuminates the potential snafu.

We join our hero as he has just typed -D<cr> twice more (page 62, second column), and is referring to location 0168 to find the beginning of the word "HELP." The first significant location is in fact not 0168, but 0167 in the preceding line. The number 4 here represents the number of characters entered by the console, and will limit the number of characters read from the line by the CCP. We must also change this number or the CCP will ignore the subsequent characters even though we have entered them in the following spaces as per instructions. This caused no problem in the printed example as the new name was shorter than the original, and trail-



ing spaces were reset to zeros.

Careful study of the source listing for the AUTOST.COM program provided by Mr. Hogan in the owner's manual will reveal more details in the use of this technique to make the CCP an ally in many assembly language programs.

Robert L. Weir
Valdosta, GA

Drive shift

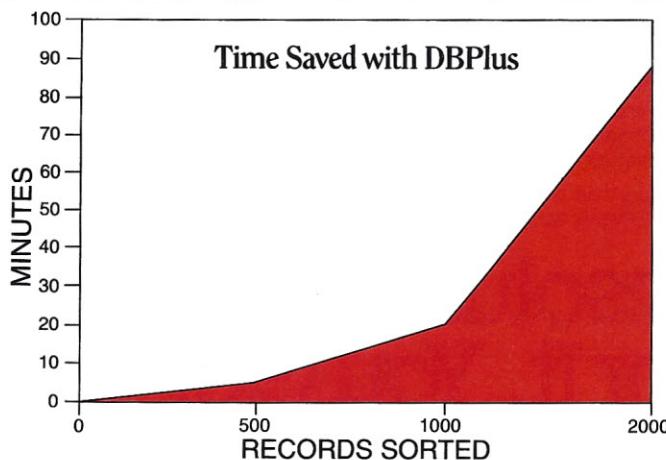
I recently had some misalignment problems on Drive A of my O-1. The problem resulted in occasional boot errors and system crashes which were extremely aggravating. Drive A eventually deteriorated to the point where I was unable to bring the computer up at all. As I agonized over the thought of giving up my O-1 to a week of repair, I discovered something I feel would be of great interest to other readers.

Since Drive A was totally inoperable, I placed the disk in Drive B and hit SHIFT " (depress shift key and hit quote key while shift is depressed). This boots up the system with Drive B as the default drive. The computer, however, thinks that Drive B is Drive A, and the CP/M A> prompt will appear on the screen. By hitting the SHIFT " (quote key), you essentially re-

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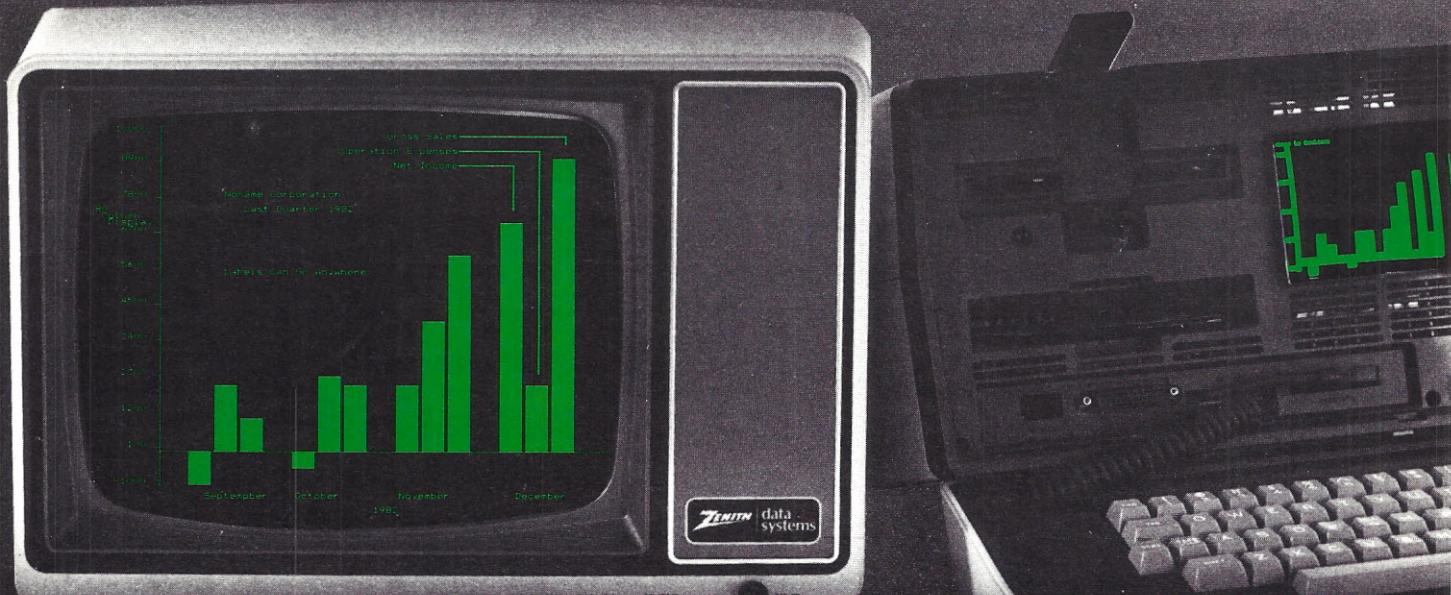
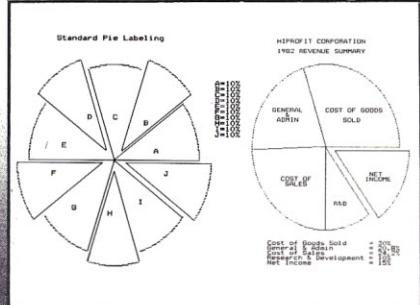
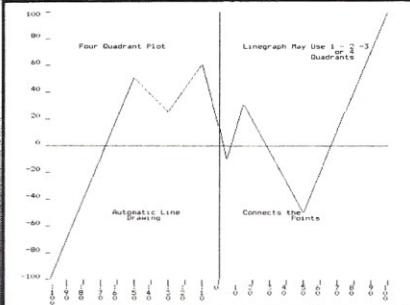
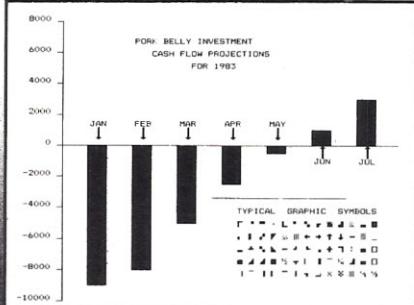
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verse the "physical" drive locations. This whole process was revealed to me by a friend and fellow O-1 user.

In looking through my documentation I was unable to find any reference to this and in talking to technical people at the local computer stores they were totally unaware of this feature and were delighted to know about it. Using SHIFT " can be a real lifesaver if you have some work to get done and you have a malfunctioning Drive A. I would suggest that you add an explanation of this feature to future updates of the O-1 user's manual and in the "Letters" column of the Portable Companion.

Mark Strickenburg
Annapolis, MD

Thanks for the tip. We've passed it on to the documentation division. By the way, pressing the TAB key after the sign-on message will accomplish the same thing on the Executive.

Changing standards

My C. Itoh 8510A printer and my WordStar software appeared to be at odds with one another. Your article entitled "WordStar Changes" in the Dec/Jan issue of the *Portable Companion* gave me an insight into what was causing the problem.

The table in your article, on page 86, shows that the standard character width has a default value of 0C (12 CPI) and the Alternate Character width is given as 0A (10 CPI). My Osborne User's Reference Guide, page R-44, suggests that ^PA changes the print output from 10 CPI (Standard) to 12 CPI (Alternate). Similarly, ^PN is given as the command for restoring the standard width of 10 CPI. The default on my printer is 10 CPI, and that was what I was getting when I called for the alternate print size.

I have now reversed the default values at 037C and 037D and can now get two different print sizes! If my "novice" perception of both the

problem and the solution are correct, perhaps you might change either the *User's Guide* or the WordStar software.

Cedric L. Chernick
Chicago, IL

Thanks for the discovery. We will see to it that future manual updates and revisions reflect this.

Mike McCarthy
Documentation, OCC

What happened?

I am happy to report that my Osborne 1 has finally returned from its upgrade, although I still find it miserable to contemplate the seven-week period during which I had to survive without it.

However, several of the features which I expected to get as part of the upgrades seem to be missing. In particular, I would like to know what happened to each of the following:

1. The P-System, which was promised as part of the double density upgrade,
2. The "software-definable character sets," which OCC claimed would be part of the 80-column upgrade (on page 274 of the Osborne 1 User's Reference Guide, 2/22/82 edition),
3. The faster baud rates for the serial port, which you claimed would be part of the 80-column upgrade (on page 16 of the Aug/Sept 1982 issue of the *Portable Companion*).

Mary O'Keeffe
Cambridge, MA

On March 9, 1983, OCC sent out a bulletin to all registered owners of the double density option regarding the P-System. We are currently testing the latest version of the P-system to assure that the developer, Softech Microsystems, has corrected all problems found in previous versions.

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Continued on page 72

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Adam Osborne

User groups and the dealer connection

User groups are and will continue to be important to every microcomputer manufacturer. True, not every microcomputer user needs a user group, but most users who do not support their local user group do not understand what they are missing.

Central to most user groups you will find a hard core of enthusiasts who know virtually everything there is to know about the manufacturers' microcomputers. Usually these hardcore enthusiasts know more than the manufacturers themselves.

Many people visiting user groups for the first time might be intimidated by the blizzard of knowledge that seems to be flying in all directions. "Do I need to know all of that to be part of this group?" is a frequent first reaction. Indeed you do not. What you do need to know is that this core of enthusiasts is usually willing and able to help neophytes learn how to make full use of their microcomputer.

User groups are one of the best places to learn.

The learning process once you get your microcomputer is, unfortunately, rarely simple for the absolute beginner, irrespective of what any manufacturer may say. And learning from the manual is never simple.

Why?

Because almost by definition, it is impossible to write a really good manual for any microcomputer. If you include everything that should be included, then the manual becomes very large and hard to work through. Simplify the manual so that it is easy to follow, and you will find that half or three quarters of the information needs to be eliminated.

The solution to this dilemma is to start with a one- or two-day training course, which may be given by a user group or an independent consulting service.

From this simple beginning, user groups continue to become a significant force looking out for

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The Wizard

Columns as ya sees 'em

Brad Baldwin

The Executive has survived the first acid test of its career. At the NCC computer show staged in Anaheim, California, it whirred and purred without difficulty despite 110 degree temperatures in what was supposed to have been an air-conditioned tent. Thank you, Osborne engineers, for putting a fan in the Executive computer. The user group from Death Valley was impressed.

There's more to be impressed about the Executive than mere fans. We also have switches.

Not having ET-like fingers, getting at the Osborne 1 on/off power switch can sometimes be a chore of considerable magnitude. A stroke of genius took the switch from the rear of the machine and moved it to the front panel. (Now, how about moving the serial and IEEE ports from the front of the machine to the rear?)

The Osborne ad, "We listened... we listened harder" should mention more than the 7" 80 column amber screen, 128 K memory, and

terminal emulation capabilities. Osborne also listened to people wanting:

- more storage space for programmable function keys (229 characters)
- a selectable cursor (blinking, dim, reverse video block, underscore, and combinations thereof)
- dot addressable video graphics (8 x 10 dot matrix character cell)
- a keyboard that can be software modified to create custom screen characters (®, ™, £, ü, etc.)
- software selectable multiple serial baud rates (110, 9600, 19200, plus 13 others)
- comprehensive documentation (six manuals total)
- upgraded software packages
With all these new features, my favorite is still the relocated on/off power switch. Such a simple little convenience feature showed that OCC was listening hard—and paying attention.

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USER	TYPEX	?	DUMPX	DS
ETRO	CHECK	COPY	FILL	READ
ROUP	TEST	TYPEH	EX	DUMP
AVE	SETWR	EXIT	DIR	MOVE
EADGR	LOG	USER	TYPE	JP
UMPH	LOAD	SETSYS	RUN	

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The Wizard

Now, let's move the ports to the rear of the machine, build in a 10 megabyte hard disk, increase the screen size to 12", decrease the weight by 15 lbs., drop the price to....

Q: I recently had the double density and SCREEN-PAC options installed on my Osborne 1 and am curious about the size of the characters in the 80-column mode.

Simply stated, why are they so small? They are the same size as those in the 100-column mode; all 80 column does is blank an inch or so off the screen. One would think that an 80-column character would be proportionally larger than the 100-column character, but it's not. Is there a patch to have a true 80-column display, and not 4/5ths of a 100-column display?

A: The SCREEN-PAC hardware was deliberately designed to provide 52, 80, and 100-column display with the 80/100 mode having the same character size, but different screen left and right margins. As far as I know, nothing can alter that arrangement.

Q: Part Three of your "I/O I/O, It's Off to Work We Go" in the Apr/May Portable Companion was interesting and informative, but I'm having problems with the section on modifying 3500/7700 Spinwriter printers. For the NEC 7710, the WordStar's (version 2.26) Diablo 1640/1650 driver didn't work; all it printed was garbage. What happened?

A: When I researched and developed WordStar patches for the NEC series of printers, I tested them with NEC 3515 and 7715

Spinwriters. There was no problem then, nor is there any problem now with the suggested INSTALL procedures with those particular models.

However, NEC makes more models than those two. As I discovered, some of the others are definitely not Diablo compatible and require an entirely different INSTALL procedure. I regret the incomplete information.

Before performing any alterations with your printer, make sure it works in the normal default settings. Do not tear into the printer and software without first getting it to work at the simple levels. Get assistance from the people selling the printer if necessary.

Interfacing the NEC Spinwriter Printers

Diablo	NEC 5510/5520
Compatible	Compatible
3515	3510
7715	7710
7725	7720

Diablo Compatible (xxx5)

Using WordStar's INSTALL program, install Diablo compatible printers for the Diablo 1610/1620 printer driver. Formerly, I said to use the 1640/1650 driver. That system works okay but a patch was required to PSINIT; the 1610/1620 driver requires no patches.

If you experience any difficulty with the 1610/1620 driver go back to the default setting of "Teletype Like Printer" and ask the person who sold you the printer for assistance.

Note that Diablo compatible models end with the number five.

NEC Compatible (xxx0)

Install for the NEC 5510/5520 printer driver. As far as I have seen, special WordStar patches to PSINIT and other locations are not necessary. Once again, if this installation causes any difficulty, go back to the default setting and

contact your printer salesperson for assistance.

NEC compatible models end with the number zero.

NOTE: The drivers are not interchangeable and work only with their respective system. DO NOT use NEC drivers with Diablo compatible models or Diablo drivers with NEC compatible models.

These drivers have been extensively tested and they are accurate to the best of my knowledge as of May 1983.

Q: I'm having a problem with the ^QF find command in WordStar. Every so often it fails to find something I know is there.

In the sample page of text I've enclosed, I asked to find the words "Many older" but got a "cannot find" response. So I tried "moist air" then "for dispersion" with the same result. Finally, I tried "condensation" and it worked. You can see that those words were in the file, so why didn't WordStar find them?

I'm careful to use the "B" option when going backwards from the end of the file.

WordStar does such a fine job for me that it is frustrating to be held up on a minor point like this.

A: It's no coincidence that ^QF found just the single word, "condensation," and not any of the two word strings. WordStar was being ornery and deliberately fussy, but it is operating correctly. The problem is in how you input the words.

Your sample text was right-justified, meaning WordStar inserts soft spaces to fill out text to the right margin. With your examples, every two word phrase just happened to have one or more soft spaces between the words.

That's the crux of the problem. If you do not input applicable spaces, WordStar will not find the phrases. (Also, WordStar cannot find a divided phrase if it's divided by a carriage return.) But there's more to learn from this.

The "Many older" example at first appeared to be an exception to the situation because I didn't see a soft space between the words. However, upon close examination I noticed that the text was printed with a Diablo 630 printer and micro-space justification had been implemented. (Very briefly, micro-space justification means all space between words is equally divided up unlike the uneven appearance of right justified text on the screen.)

I know that WordStar throws in needed soft spaces starting with the first two words; "Many older" was at the beginning of the line. Therefore, a soft space must have been on your screen when you tried to find "Many older." It was difficult to see from the print-out because your Diablo 630 divided the one space into five pieces.

WordStar is operating normally, although one may argue it's being a wee bit unfriendly. To get around it, edit the files with right justification turned off to eliminate embedding of soft spaces with the text.

As discussed in previous *Wizard* columns, do not perform backward searches on long files. Save the file first (^KS) and then search forward.

Q: I'm having some problems understanding hexadecimal coding. If an address is 06BF, do I read it as "zero, six, bravo, foxtrot" or is it read "oscar, six, bravo, foxtrot."

A: Hex coding uses these characters:

0 1 2 3 4 5 6 7 8 9 A B C D E F

There is no "oscar" as in the letter O. Also, there is no letter I—the hex code 1D is read as "one D." The *Portable Companion* makes every attempt to ensure there is no confusion in interpreting these codes, although a few have slipped by in the past.

A REAL TIME CLOCK ...for your Osborne 1

This is a true battery operated real time clock/calendar that plugs inside your IEEE 488 port without requiring disassembly or altering your Osborne warranty. Included diskette software allows you to access the time or date through MBASIC, WORDSTAR, MAIL-MERGE, CP/M, and SUPERCALC. Other utilities are also included.

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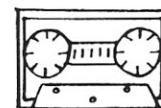
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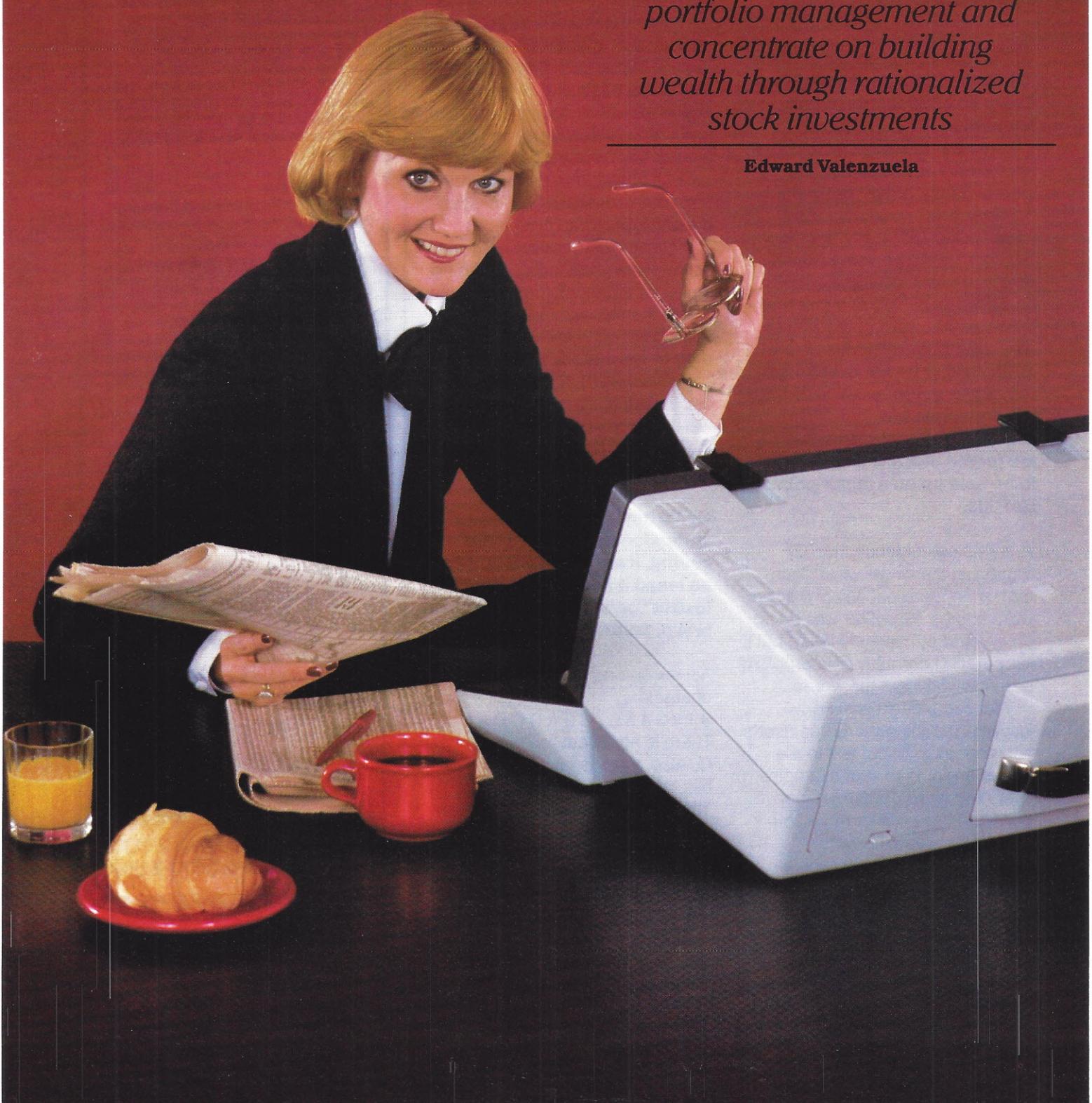
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Playing the market

By using a computerized system, investors can simplify portfolio management and concentrate on building wealth through rationalized stock investments

Edward Valenzuela



Read recent newspaper accounts of the public stock offerings of some microcomputer manufacturers may have whetted investing appetites. Such companies as Apple, Altos, Apollo, Corvus, Fortune Systems, Televideo Systems, and OCC have either gone public by offering stock or made announcements to that effect. Those who plan to take part in the growth of this industry via stock purchase need a systematic way of handling their investments.

This article will describe how the Osborne keeps track of stock investments, using a FOG User Library program called STOCK BASE.

The Osborne 1 provides a natural environment for following stock investments, a number- and data-intensive endeavor. The ease and accuracy of computing using CBASIC or SuperCalc, coupled with disk storage of the input data and output, makes portfolio management relatively simple. In addition, if the computer is used for investment record-keeping, a portion of its cost may be tax-deductible. Check with a tax-advisor.

Taking stock

There are three general types of stock investment programs. One type of program helps to decide which stocks to buy. This is known as fundamental analysis or stock selection. Another type of program helps decide when to buy or sell, called technical analysis or market-timing. Finally, there are programs that help keep track of it all—"portfolio valuation and record-keeping"—and answer the "How am I doing?" question. STOCK BASE is a program of the latter type.

After the dollars

Once the decision is made to purchase a stock, and those hard-earned dollars are shelled out, investors naturally want to follow

*****STOCK PORTFOLIO ANALYSIS*****

Option List

```
0 = EXIT to CP/M
1 = CREATE stock file
2 = ADD/DELETE to stock file
3 = CHANGE entries in stock file
4 = HISTORICAL performance summary
5 = UPDATE weekly stock prices
6 = TIME-SERIES regressions
7 = BUY/SELL FILE entry
8 = STOCK SPLIT entry
```

SELECT OPTION NUMBER: 6

Figure 1

*****STOCK PURCHASE DATA*****

```
STOCK NAME: ? Advanced Micro Devices
EXCHANGE: ? NYSE
NUMBER SHARES: ? 100
PURCHASE DATE: ? 2/10/83
TOTAL COST: ?
COMMISSION: ? 68.32
SYMBOL: ? AMD
DIVIDEND: ? 0.0
```

INSTRUCTIONS: enter total purchase cost

Figure 2

*****STOCK PURCHASE DATA*****

```
STOCK NAME: Dow Chemical
EXCHANGE: NYSE
NUMBER SHARES: 234
PURCHASE DATE: 6/30/81
TOTAL COST: 4500
COMMISSION: 50
SYMBOL: DOW
DIVIDEND: 1.8
```

INSTRUCTIONS: SELECT FIELD TO BE CORRECTED

```
0 = no changes
1 = stock name
2 = stock exchange
3 = number of shares
4 = date purchased
5 = total purchase cost
6 = commission charges
7 = stock symbol
8 = annual dividend
```

WHICH FIELD DO YOU WANT TO CHANGE?

Figure 3

the stock and see how it's doing.

The first thing to do is start a data base with all the important purchase information: How many shares were bought? What is the name of the stock? What is the stock symbol? On what exchange is it traded? How much was paid? What was the commission charged? On what day was it purchased? How much does the company pay in dividends? All this information needs to be recorded.

In Figure 1, the main menu of STOCK BASE is shown. Option 1, the stock file-creation option, prompts for all the above data. Brokers should be able to provide all the necessary data, including the stock symbol and the annual dividend payments. This data can also be obtained from Moody's or Standard & Poor's (S&P) handbooks which are available in major libraries.

Data entry is shown in Figure 2 and is fill-in-the-blanks type of data entry. Other options allow you to add or delete stocks (option 2), and edit the files (option 3). Figure 3 shows the original data being corrected using the editing option. Option 8 updates all files for stock splits and stock dividends.

Once the original stock and price files have been created, updating prices is the next stage. (I usually update prices daily, but this may be more work than some are willing to do.) Weekly or monthly updating is fine. Prices can be obtained from the daily newspaper, the *Wall Street Journal*, or *Barron's* as well as other financial publications. Some stock programs allow access to remote data bases and will update prices automatically, but this can get expensive. I prefer the inexpensive newspaper route and the hands-on involvement of looking

"Some stock programs allow access to remote data bases and will update prices automatically, but this can get expensive."

each stock up individually. Option 5, the update stock prices option, prompts for entry of each stock price. Stocks are stored in alphabetical order (the way the newspaper reports them), so it doesn't take long to update even for as many as 50 stocks, which is the current limit of the program.

Multiple portfolios can be followed simply by maintaining each portfolio on a different floppy disk. Figure 4 shows the price update screen as prices are being updated. The program also asks for input of current value for the S&P 500 stock index, to be used for comparison purposes. After all stock prices have been updated, the program will print an analysis either to the screen or dump to a printer. This is a synopsis of present status, as compared to where you were at last update. This is shown in Figure 5. Note the portfolio totals. The performance of the portfolio is compared to the Standard & Poor's 500 stock average.

Now, as periodical checks are made, ask some questions: What's the price today compared to the price originally paid? How much money was gained or lost? What's the percentage increase or decrease on the original investment? What is that amount when the holding period is considered? That is, what is the annual return from stock appreciation? How about from dividends?

All these questions can be easily answered with STOCK BASE. By selecting option 4, the historical performance summary option, you get the analysis shown in Table 1 (on page 23). (There is a lot of information here, and I chose to dump it to a printer rather than display it on the screen. That way I can peruse it at my leisure.)

If more than a few stocks are involved, tracking a portfolio becomes a real job. Now, which stocks are doing the best and which are losers? Sort of an exception analysis is necessary. This calls for sorting the portfolio in different ways. Once option 4, the historical performance summary option, has been selected, a sort option menu appears, shown in Figure 6. This allows data to be dumped in almost any sorted combination.

Records maintained in this way provide more than an accurate reflection of status. An important benefit of record-keeping occurs at tax time. Those involved in investing at all realize that an income tax Form 1040 must be filed, accompanied by Schedules B (for reporting dividends) and D. Schedule D is the capital gains form which asks for short- and long-term capital gains received during the year. At any time during the year, STOCK BASE can run a capital gains analysis providing a summary of current position. Thus action can be taken based on the position of actual gains and losses near year-end. It also calculates

"paper" gains and losses during the year. At year-end, a listing can be printed which conforms to Schedule B format. An example is shown in Table 2. This portion of the program uses a transaction file maintained by selecting option 7, the BUY/SELL transaction entry option. This portion of the program has not yet been fully integrated into the FOG library version.

In addition, this portfolio valuation program will maintain price files containing historical price information entered, either on a daily, weekly, monthly, quarterly or annual basis. This provides a view of how the stocks have performed over different time periods, both short term and long term. (I do a lot of library research, getting back copies of *Barron's* to obtain the historical prices over a period of years.) The price action for any of these time periods can be observed by looking at bar chart displays of the historical prices. This is obtained by selecting option 6, the time series regression option, and asking for plots only. (I usually select the auto-scaling option as well.)

Risk-return relationships

In addition to the information on the returns from stock portfolios, the program will also provide some rudimentary information on the risk associated with each stock. While return is usually defined as the gain in stock price divided by the original investment, adjusted for holding period, risk is more nebulous.

Risk in stock investments is gen-

*****STOCK PRICE UPDATE*****

No.	Stock Name	Old Price	New Price	Change
1	Aeroflex Labs	20.250	20.875	0.625
2	Andrew Corp.	37.500	37.875	0.375
3	Automatic Data	36.000	35.875	-0.125
4	Aydin Corp.	43.875	44.250	0.375
5	Baker Int'l	19.625	19.750	0.125
6	Cipher Data	28.500	29.750	1.250

INSTRUCTIONS: ENTER stock price for computer data ? 36.5

Figure 4

*****STOCK PURCHASE DATA*****

No.	Stock Name	Current Price	Price Change	% Inc.	\$ Inc.
31	Ma/com	28.625	0.63	2.23	75.0
32	Moog A	13.875	0.38	2.78	37.5
33	Aeroflex Lab	20.875	0.63	3.09	51.3
34	Cipher Data	29.750	1.25	4.39	125.0

37	S&P 500	148.000	3.00	2.07	3.0
	PORTFOLIO:			1.05	816.13

Figure 5

HISTORICAL PERFORMANCE SUMMARY OPTION LIST

SORTING OPTIONS:

0 = return to main menu
 1 = on date purchased
 2 = by number of shares
 3 = by stock exchange
 4 = by purchase cost
 5 = by current value
 6 = by percentage increase in value
 7 = by annual yield
 8 = by \$ increase in value
 9 = alphabetical by stock name

enter option number for sort:

Figure 6

erally taken to mean variability of returns. That is, if a stock tends to have a stable price, as ATT used to have, the stock is considered to have very low risk. Investors expect no surprises. The dividend is almost guaranteed and the stock price changes very little. The return could be low or high, but it is predictable, with little risk of the prediction being wrong. On the other hand, many of the smaller "high-flyers" are very unpredictable. They could be flying high one day and come crashing down to earth the next. The returns are very unpredictable, and a high risk is associated with ownership.

The risk does not necessarily imply anything about the return. One theory of investments says that risk and return go together over the long run, but the stock may already be sold by the time the long run comes. The question to ask is, "Is the price I am paying for this stock, and the possible return, worth the risk associated with it compared to alternative investments?" The answer to this question is primarily a function of the ability to endure risk. Maybe those who like sleeping soundly at night should stick to low-risk stocks. Those who've always had the daredevil about them may need the vicarious thrill of high-risk investments.

What makes a stock more risky than another? As alluded to above, risk is measured by variability of returns. Suppose the stock market moves up by 1 percent one day, and Joe Investor's stocks move up 2 percent. Now suppose the market (as measured by one of the popular averages) moves down

"Records maintained in this way provide more than an accurate reflection of status. An important benefit of record-keeping occurs at tax time."

by 1 percent. If Joe's stocks move down by 2 percent, then it can generally be said that his stocks are twice as volatile as the market. That is, for a given market movement, those stocks move twice as far, either up or down. Now carry out the measurement over many time periods and use a statistical routine to determine how each stock moves, on the average, compared to the market. This measurement provides a proxy measure of risk.

ATT used to be the classic low-risk stock. It tended to move with the market. Since deregulation, this has no longer been true. The stock has become much more volatile primarily because people disagree about the future for Ma Bell. This example should alert investors to the fact that risk and return measures derived from studying the past may change as company circumstances change.

STOCK BASE will perform this statistical measurement on stocks and rank them by using a risk-return ratio. Two methods are used. One risk-return ratio calculates the geometric average return divided by the standard deviation (variability measure) of the returns. Another, more esoteric measurement is known as the alpha/beta ratio. Alpha provides a different measure of the return of each stock, relative to the market. The Stan-

dard & Poor's stock average of 500 stocks is taken to be the market for this measurement. Beta is a measure of the riskiness of each stock, and is technically the slope of the regression line (alpha is the intercept) relating returns on the stock to returns of the S&P 500. The alpha/beta ratio is thus a measure of the risk-adjusted returns from the stock.

Call the first ratio the overall risk/return ratio. It provides a measure of total return divided by total risk. A theory of investments called "Modern Portfolio Theory" asserts that this total risk can be subdivided into a risk related to the risk of the stock market in general, and a risk specific to the particular stock. The alpha/beta ratio is a measure of the specific risk.

STOCK BASE stores these ratios in a data file and then allows sorting by either ratio. Thus it can be determined which stocks are providing the highest returns, which stocks have the highest risk, and which stocks have returns which are commensurate with the risk. Stocks with high ratios are generally the "winners" in a portfolio over the particular time period used for the measurement. Stock rating services, such as Value Line, generally use a minimum of five years of quarterly data. This insures that at least one up market and one down market will be captured by the data. The usual caveat applies: risk/return ratios which applied in the past may not hold in the future.

Even so, the data has proven to be quite useful to investors. The risk-return analysis is obtained by selecting option 6, the time-series regression analysis option. The output is dumped to the printer as shown in Table 3. Again, there is a lot of data reported here, probably more than can really be useful.

OPTION 4 - HISTORICAL SUMMARY OF STOCK PORTFOLIO
SORTED BY ALPHABETICAL BY NAME

DATE: 3/4/83

stk no.	date purchd	no. shrs	company symbol	stock xchng	purch equiv	current price	total			total				
							purchase cost	current value	\$ increase	% inc	dividend yield	annual return	% of assets	
1	5/19/81	82	ARX	aeroflex labs	AMEX	17.741	19.250	1454.73	1578.50	123.77	8.5	0.0	4.7	7.6
2	12/09/81	100	ANDW	andrew corp	OTC	20.750	41.000	2075.00	4100.00	2025.00	97.6	0.0	73.7	19.6
3	3/12/80	40	AUD	automatic data	NYSE	17.750	40.000	710.00	1600.00	890.00	125.4	0.0	31.4	7.7
4	7/28/80	53	AYD	aydin corp	NYSE	21.122	45.625	1119.46	2418.13	1298.67	116.0	0.0	34.5	11.6
5	12/22/82	25	BKD	Baker Internat	NYSE	22.500	19.125	562.50	478.13	-84.38	-15.0	0.0	-56.1	2.3
6	1/20/83	100	CIPD	cipher data pr	OTC	27.151	32.750	2715.11	3275.00	559.89	20.6	0.0	373.6	15.7
7	1/20/81	248	CPTD	computer data	OTC	5.353	18.000	1327.43	4464.00	3136.57	236.3	0.0	77.2	21.4
8	5/18/82	50	CBE	cooper industr	NYSE	31.717	30.125	1585.86	1506.25	-79.61	-5.0	0.0	-6.3	7.2
9	7/14/80	85	DAY	dayco	NYSE	11.588	11.500	985.00	977.50	-7.50	-0.8	0.0	-0.3	4.7
10	6/30/81	16	DOW	dow chemical	NYSE	18.750	31.750	300.00	508.00	208.00	69.3	5.7	42.6	2.4
TOTALS :							12835.09	20905.50	8070.41	62.9				

Table 1

**** CAPITAL GAINS AND LOSSES REPORT ****

NUMBER of shares	STOCK name	DATE acquired	DATE sold	GROSS SALES price	ORIGINAL cost	LONG TERM GAIN	SHORT TERM GAIN
100	Vermont Rese	2/23/82	12/22/82	1011.03	1341.64		-330.61
100	Monolithic M	2/23/82	10/21/82	1575.60	1239.96		335.64
100	Ramtek Corp	2/23/82	10/21/82	1428.12	1456.03		-27.91
56	Ball	5/15/81	10/21/82	1330.22	839.70	490.52	
TOTALS:				171/82	12/31/82	490.52	-22.88

Table 2

BETA ANALYSIS OF PORTFOLIO on B:DAYHST.DAT

DATE: 3/4/83

STOCK no.	name	no. of points	alpha	beta	stand error intrcpt	stand error slope	stand error estimate	RETURNS PER PERIOD			annual yield	to-risk ratio	reward a/b ratio		
								stand error r-sq	stand error r-est	standard deviatn					
0	S&P 500	18	0.000	1.000	0.000	0.000	1.000	1.000	0.003	0.003	0.010	-0.017	0.019	0.744	
1	aeroflex lab	18	-0.002	0.603	0.005	0.448	0.019	0.102	0.319	-0.001	-0.001	0.020	-0.019	0.038	-0.185
2	andrew corp	18	0.003	0.966	0.003	0.321	0.014	0.362	0.602	0.006	0.006	0.017	-0.027	0.040	1.562
3	automatic da	18	0.004	1.324	0.004	0.423	0.018	0.380	0.616	0.008	0.007	0.023	-0.046	0.043	2.005
4	aydin corp	18	0.007	0.436	0.007	0.694	0.030	0.024	0.155	0.009	0.008	0.030	-0.037	0.097	2.240
5	Baker Intern	18	-0.009	2.298	0.006	0.570	0.025	0.501	0.708	-0.003	-0.003	0.034	-0.050	0.072	-0.886
6	cipher data	18	0.011	0.540	0.007	0.695	0.030	0.050	0.224	0.014	0.013	0.030	-0.017	0.092	3.750
7	computer dat	18	0.007	0.410	0.008	0.780	0.034	0.017	0.130	0.008	0.008	0.033	-0.043	0.074	2.063
8	cooper indu	18	-0.008	1.159	0.007	0.619	0.027	0.180	0.424	-0.005	-0.005	0.029	-0.062	0.034	-1.258
9	dayco	18	0.009	-0.391	0.007	0.632	0.030	0.020	0.140	0.008	0.008	0.029	-0.022	0.100	2.167
10	dow chemical	18	-0.000	1.453	0.004	0.336	0.015	0.539	0.734	0.004	0.004	0.021	-0.038	0.048	1.036
11	portfolio	180	0.002	0.889	0.002	0.186	0.025	0.114	0.338	0.007	0.005	0.027		1.715	63.75
														0.25	

Table 3

Sophisticated fun

All this information may not make anyone more successful as an investor, but it certainly makes investing more fun. The Osborne 1 provides the proper coupling of hardware and software to allow cost-effective portfolio monitoring for the small investor. The degree of user involvement is totally variable. Using the Osborne 1 and STOCK BASE, or any of the investment programs available on the market, allows the investors to examine their portfolios in much more detail and in a more sophisticated manner than would be possible by hand.

STOCK BASE provides an answer to all those doubting Thomases who inevitably ask "What can you do with a home computer?" or "Where's the economic justification?" This is just one of the three major applications of computers to investing. The other two applications mentioned previously are more graphics-intensive than portfolio valuation, but the Osborne 1 is a suitable package for these applications as well. STOCK BASE and my Osborne have certainly helped me to be more systematic in my approach to investing. They have also had the additional and welcome benefit of making my investments more profitable.

FYI

For further data on the theory of investing, interested readers may wish to consult any of the following:

William F. Sharpe, *Investments*, Second edition, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1981.

Burton G. Malkiel, *A Random Walk Down Wall Street*—Second college edition, W. W. Norton & Company, New York, 1981.

Frederick Amling, *Investments*—Fourth edition, Prentice-Hall, Inc.,

"In addition, this portfolio valuation program will maintain price files containing historical price information entered, either on a daily, weekly, monthly, quarterly, or annual basis."

Englewood Cliffs, New Jersey, 1978.

Those interested primarily in the use of computers in investing may wish to consult:

William B. Riley, Jr. and Austin H. Montgomery, Jr., *Guide to Computer-aided Investment Analysis*, McGraw-Hill, New York, 1982.

X. T. Bui, *Executive Planning with Basic*, Sybex, Berkeley, 1982.

Rod E. Packer, *The Investor's Computer Handbook*, Hayden Book Company, Rochelle Park, New Jersey.

In addition, the American Association of Individual Investors publishes a monthly newsletter, "Computerized Investing." It is available from the AAII, 612 N. Michigan Ave., Chicago, Illinois, 60611.

For a copy of STOCK/BAS send 2 diskettes and \$10.00 to:

Edward Valenzuela
2001 Wyllis
Midland, MI 48640

Edward Valenzuela is an economic planner for Dow Chemical Co. He has a Ph.D. in Physical Chemistry from Univ. of California Berkeley and an MBA in Finance from Central Michigan University. Dr. Valenzuela has been working with computers since 1965 and uses STOCK.BAS daily to follow his personal investments.



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CBASIC made ~~easy~~

less difficult

*Passing the programming
buck
to WordStar's function keys*

James Peterson

One of the reasons I bought an Osborne was to write a series of statistical programs for it, so I was excited about the touted advantages of CBASIC in contrast to other varieties of BASIC. Most (but not all) of CBASIC's strengths arise from the fact that it is a compiled rather than interpreted language. In this respect it is more like the high-level languages (FORTRAN, COBOL, etc.), which run on the big mainframes, than like other microcomputer varieties of BASIC.

All higher-level languages such as BASIC, Pascal or FORTRAN must somehow be rendered into a machine-readable form before they will run. This is done with either an interpreter or a compiler program. These programs, themselves written in machine language, take the higher-level language and translate it into simple "turn this switch on and that one off" terms, which a computer can understand.

There is one fundamental difference between an interpreter and a compiler, however. Speed. A com-

piler "reads" through the higher-level language program, translates all the commands into machine-language equivalents, and stores the whole machine language program. The machine-language version is executed with no further reference to the original higher-level language in which the program was written.

An interpreter system works differently. It too translates the high-level language into machine terms, but it does so statement-by-statement, while the program is running, and then "forgets" its translation of each line as it goes on to process the next statement. This means that it must re-translate every time that statement is executed.

The translation step takes a finite amount of time, and in a complex program where certain statements are executed over and over, all those little pauses for translation can add up to a very long run time. That is the major price you pay for using an interpreted language such as MBASIC.

With all this in mind, I set out to

give CBASIC a try. Armed with a copy of the *CBASIC User Guide* by Osborne (yes, that Osborne), Eubanks and McNiff (Berkeley: Osborne/McGraw-Hill 1981) I set to work.

I loaded WordStar into Drive A, wrote a simple little CBASIC program and saved it onto a fresh diskette in Drive B. Then I pulled WordStar out of A, put in the MBASIC/CBASIC diskette, hit RESET and loaded it, typed SYSTEM, got A> from the machine, and entered CBAS2 B: plus my program name. The CBAS2 program is the CBASIC compiler. The computer tried to compile the program but ran into a whole slew of bugs, which it dutifully reported as it listed my thwarted program on the screen. I figured out what some of the errors were, RESET again, put WordStar back in A. Loaded it. Corrected the errors. WordStar back out. MBASIC/CBASIC back in. RESET. Twiddled my thumbs while the disk loaded. Tried another compilation. More errors. And on. And on.

The CBASIC User Guide provides chilly encouragement for this phase of programming: "If you finally compile a CBASIC program which has no compiler errors, you can run the program on the computer and see if it works in practice." Note that "If." They didn't seem to think I was bright enough to get my little program to compile. I decided I didn't care enough to prove them wrong and gave up on CBASIC in disgust.

For a long time I did all my programming in MBASIC, living with slow execution in return for putting up with less aggravation while writing the programs. Then I wrote a fairly complicated program (a factor analysis program, in case you are unfortunate enough to know and care about such things) that required many thousands of arithmetic operations. It ran too slowly for my taste so I reluctantly turned back to CBASIC, resigned to shuffling diskettes around.

This time, however, with no MBASIC to fall back on, I determined to make things easy on myself and explore the system options available to me. By the time the first factor analysis program was up and running, I had discovered some procedures that vastly simplified the process of writing a CBASIC program. I have become a convert, and my missionary zeal impels me to share my methods.

On Drive A, run a special copy of WordStar with the number keys programmed for use with CBASIC. (Use the SETUP routine on the CP/M System Diskette to program the keys.)

On Key 0, program LB(cr)N. Type ^0 after loading WordStar and the program will log to Drive B and prepare to edit a non-document file (such as a CBASIC program).

Key 1 is programmed ^KD. Type ^1 and WordStar saves the program and exits to the menu.

Key 2 is R:CBAS2 B. Press this key plus the title of the program and WordStar will use the CBAS2 program on Disk B (see the descrip-

tion of that disk, below) to compile your CBASIC program.

Key 3: Program R:CRUN2 B. This key functions like Key 2 except that it runs the program instead of compiling it. These two keys contain the essential secret behind my method, which is this: You can use the "R" option on the WordStar menu to run CBAS2 and CRUN2 without exiting WordStar.

Program the remaining keys to print out the CBASIC keywords you use most often. I find PRINT, PRINT CHR\$(26), INPUT", FOR I% = , NEXT I%, and OPEN "B:" + to be a useful assortment, but specialized programming needs will determine the best arrangement.

For the diskette which resides in Drive B, I copied the following programs from the MBASIC/CBASIC diskette: AUTOST.COM, XDIR.COM (both of which may be omitted if you only intend to use this disk while programming with WordStar), CBAS2.COM, CRUN2.COM, and XREF.COM. The last is a handy debugging tool which is helpful when compiling programs.

You can set up this diskette in either of two ways. Use the PIP program on the CP/M System Diskette to transfer them from MBASIC/CBASIC, or make a copy of the MBASIC/CBASIC diskette and delete the unnecessary programs with the "Y" option on WordStar.

Naturally you won't use WordStar to run your programs once they are up, debugged and functional. Therefore, keep in mind they will run differently when WordStar is not resident in RAM. For one thing, since WordStar takes up memory, more memory is available for your program when you run without it. This means that a program which runs without a hitch on its own may run out of memory when executing under WordStar. To avoid this write your program in modular form, putting each component module on a separate disk file, and later compile the whole program together using the INCLUDE statement. Also, you

may need to reduce the size of your dimensioned data arrays for your test runs under WordStar. You can boost them back up when you're finished tinkering.

Another thing you may notice is that your program will seem very unforgiving of mistakes on responses to INPUT statements when running under WordStar. This difficulty will disappear when you "get out from under" WordStar and run the program normally.

If you are now slogging along writing in MBASIC, you will be well-rewarded for trying this streamlined approach to CBASIC. Imagine being able to use all the power of WordStar for program editing. The block-moving capability can be employed to move statements around in the program and to replicate lines with similar contents.

You can write the first draft of your program with long, descriptive variable names, get the program running, and then go back through with the global find/change to replace the long mnemonic names with short ones to save space. Use the global search to seek out and count all the occurrences of a variable, or to correct typographical errors in variable names.

In contrast to the semi-blind and graphically messy MBASIC Edit mode, all editing work is visible as you scrutinize it. It is also useful to write short statements, one to a line, get things running, and then concatenate the lines together with colons, using ^G to erase the carriage return markers in the last column.

Add all these editing features to the speed with which CBASIC programs run. Combine this with the ability to distribute only compiled versions of a program, which the ordinary user cannot list or alter (meaning, for one thing, that he cannot easily delete your copyright statement). Discover the flexibility of CBASIC file handling procedures and modular programming. Give CBASIC a fair try, and I'm betting that you too will become a convert.

Cutting through correspondence

*Type, edit and print
in one swoop*

Walter R. Beam

Despite the wonders of WordStar, there are times when one would like to pound out a simple letter without the complexities of typing, editing and printing. Here is an answer with these two simple MBASIC routines. The MBASIC code is shown in Figure 1.

This routine uses the MBASIC file structure, to store a copy of the correspondence in a file called PAGEXXXX.TXT, where XXXX is the identifier which you insert when asked for page identification.

MBASIC files are built up using delimiters: either quotations when output to the file is via WRITE #, or commas when output is via PRINT #. The former is used here, hence if quotations appear in the text, they must be replaced by something else in the file. Here is used the rather uncommon character "I"; thus if a "I" (with quote marks) is used in your correspondence, it will appear correctly in the first version but will be replaced by I in subsequent copies. Copies are

made using the MBASIC routine in Figure 2.

The first routine is named DTYPE.BAS, and the second is DUPE.BAS. It is convenient to establish function keys as in Figure 3.

Because of the brevity of the routines, even on single-density diskettes one can include MBASIC.COM, DTYPE.BAS, DUPE.BAS and XDIR.COM, and still have plenty of room for correspondence copies.

To set it up, in brief:

- PIP MBASIC.COM from your BASICS diskette to a freshly formatted one, and SYSGEN the system tracks from the CP/M diskette.
- Insert your CP/M diskette into Drive B, the newly created diskette into drive A; reset, and press <return>. Then type SETUP, answering A to the question of which drive you want to initialize.

Select E for function keys, and program the keys as shown above.

- To use the system, insert the diskette in drive A, press return, and when A> appears hit <ctrl> and 0. This will load MBASIC and DTYPE and give a RUN command. At this point, load your printer with paper. Answer the questions about the type faces you want to use (see note following about printers), width of print and the page identification. A "ruler line" will then appear, which will be repeated each line of type. The ruler line marks the chosen length. If exceeded, the line will have to be re-typed (though deleting line 220 of the DTYPE routine will allow longer lines to be typed if desired).
- Continue typing one line at a time. Each time a line will print on the printer, just as it was typed. The paper, of course, may be adjusted to start at any point. A

combination of TAB and SPACE can be used to reach any point on the line, and a blank line can be introduced by hitting <cr>. At the end of the last line, or on a separate line, type a caret (^) as the last character of a line, and the file produced will be closed, MBASIC will be booted. Start over by using the function key 0 (with the control key).

- If another copy is wanted immediately, hit control and function key 1 (either from CP/M level or inside MBASIC), and indicate the page identification using up to four letters or numbers. A new file is created by typing DIR while in CP/M, called PAGEXXXX.TXT, where XXXX is whatever set of letters or numbers used. Another type spacing or style may be used for the DUPE function.

A single disk as described will hold about 25 pages of text, in single density (much more in double), depending on how much information is put on a page. No multiple copies are kept, as in WordStar, so disk space is not so important.

The requirements of each printer may be different. On a C-Itoh Pro-Writer, selecting one of the four basic print styles requires sending an escape character—CHR\$(27) in MBASIC—followed by either an N, E, P or Q. If another character sequence is required, change line 140 correspondingly. Simply turn off the printer to reset if the type style does not change.

Editor's note: Walter Beam's program works with any dot matrix or letter quality printer on the market, although it was commented with C.Itoh 8510 and NEC 8023 printer control codes N, E, P and Q.

Readers with different printers than those two should enter the appropriate ASCII control code as specified in the printer manual. Alternate pitch (character size) is an optional feature of the program and may be deleted if not required or bypassed with a carriage return when prompted.

```

10 PRINT "This program lets you type a letter and store"
20 PRINT "it for making a copy. Adjust paper in printer;"
30 PRINT "turn printer on."
40 PRINT "Keep lines within ruler; close final"
50 PRINT "line with a ^."
60 PRINT "Select type face: 10 pitch N, 12 pitch E,"
70 PRINT "Proportional P, or 17 pitch Q. (Use letter.)"
80 LINE INPUT "?",B$
90 INPUT "Number of margin spaces at left ";M%
100 RULER$="-----10-----20-----30-----40-----"
110-----50-----60-----70-----80-----90-----"
110 LINE INPUT "Enter up to 4 digit page no. ";C$
120 OPEN "O",#1,"A:PAGE"+C$+".TXT"
130 INPUT "Width of printed portion? ";WIDE%
140 LPRINT CHR$(27)+B$
150 A$=" "
160 PRINT CHR$(26)
170 PRINT "Enter text below within ruler length"
180 CONTINUE%=1
190 WHILE CONTINUE%=1
200 PRINT LEFT$(RULER$,WIDE%-1)+"!"
210 LINE INPUT",",A$
220 IF LEN(A$)>WIDE% THEN PRINT "LINE TOO LONG":GOTO 190
230 IF RIGHT$(A$,1)="/" THEN CONTINUE%=0:A$=LEFT$(A$,LEN(A$)-1)
240 OUTSTR$="" :B$=A$
250 WHILE LEN(A$)>0
260 POSN%=INSTR(1,A$,CHR$(34))
270 IF POSN%=0 THEN OUTSTR$=OUTSTR$+A$:A$="" ELSE OUTSTR$=OUTSTR$ +
LEFT$(A$,POSN%-1)+"":A$=RIGHT$(A$,LEN(A$)-POSN%)
280 WEND
290 LPRINT SPACES$(M%)+B$
300 WRITE #1,SPACES$(M%)+OUTSTR$
310 WEND
320 CLOSE #1:END

```

Figure 1

```

10 PRINT "This routine copies typed page direct"
20 PRINT "to printer using DTYPE."
30 LINE INPUT "Number of page ",A$
40 LINE INPUT "Type face: N, E, P, or Q ",B$
50 LPRINT CHR$(27)+B$
60 OPEN "I",#1,"A:PAGE"+A$+".TXT"
70 WHILE NOT EOF(1)
80 INPUT#1,A$
90 OUTSTR$=""
100 WHILE LEN(A$)>0
110 POSN%=INSTR(1,A$,"|")
120 IF POSN%=0 THEN OUTSTR$=OUTSTR$+A$:A$="" ELSE OUTSTR$=
OUTSTR$+LEFT$(A$,POSN%-1)+CHR$(34):A$=RIGHT$(A$,LEN(A$)-POSN%)
130 WEND
140 LPRINT OUTSTR$
150 WEND
160 CLOSE #1

```

Figure 2

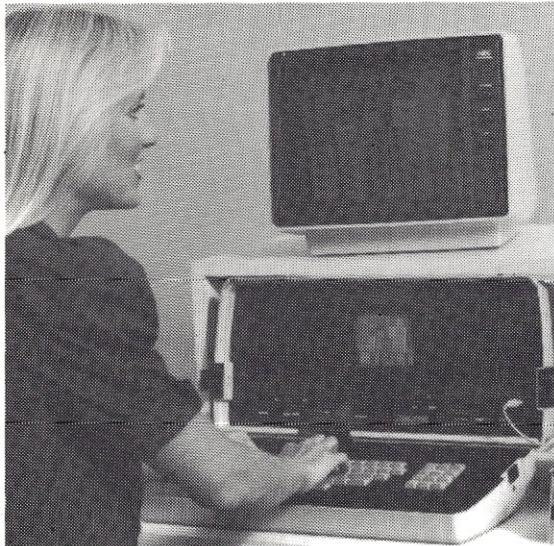
```

Key 0: MBASIC<CR><CR>LOAD"DTYPE.BAS"<CR>RUN<CR>
Key 1: MBASIC<CR><CR>LOAD"DUPE.BAS"<CR>RUN<CR>
Key 2: SYSTEM<CR>

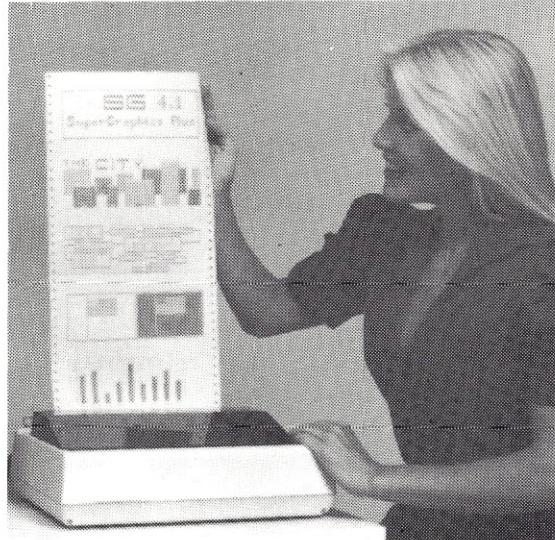
```

Figure 3

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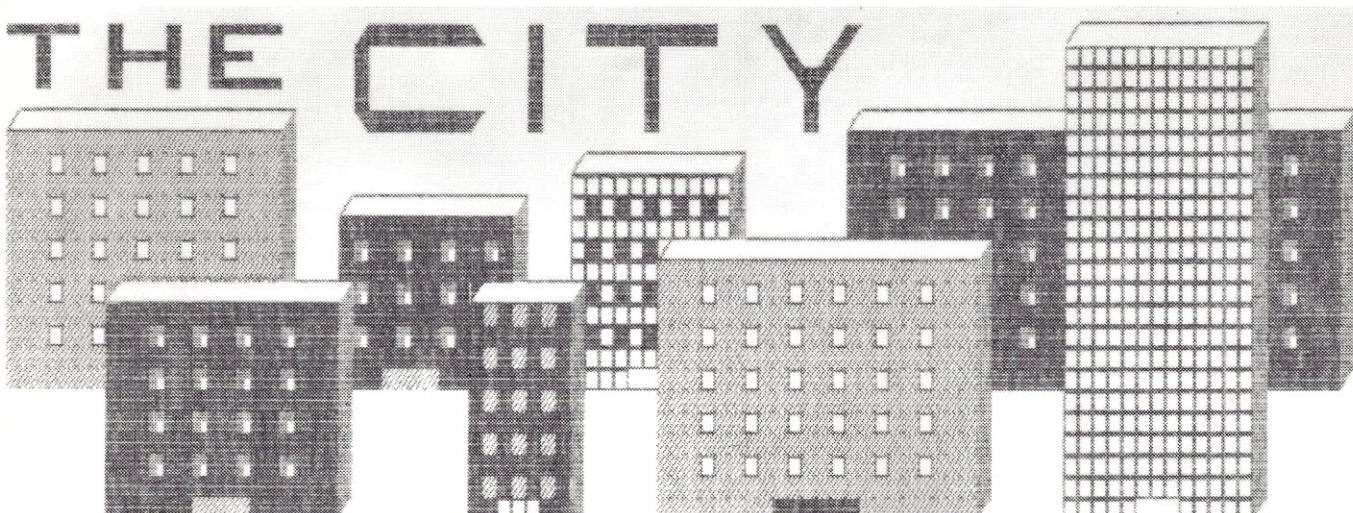
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Graphics screen dump

For the Epson MX-80 printer

Jim Conn

Editor's note: In the June issue of the Portable Companion we published a short MBASIC program, "Graphic Illustrations," which created 3-D bar graphs. At the time, we offered a challenge to our readers to incorporate within the program some sort of screen dump for dot addressable printers. Jim Conn took us up on our challenge and wrote the following assembly language program that dumps an 80 x 24 - character Osborne 1 (52-column version) screen to the Epson MX-80 with Grafrax. Here's a quick rundown on its features:

- The program was designed primarily as a "stand alone" language-independent screen dump. It does not matter what language was used to create

the screen graphics—this program can print it out after exiting to the CP/M A prompt and running the assembled COM file. Because of the "generic" quality of the program, it runs slower than language-dependent screen printing programs.

- In an attached story, Conn provides instructions for using his screen dump as a subroutine to an MBASIC program, which is more desirable than having to exit to CP/M to print a screen.
- Dim video characters are properly interpreted and print lighter than "bright" video.
- Eliminates the underline character that results when using an offset of 127 decimal as explained in the June issue.

- Both single density and double density ROM versions are described.
- The program is heavily commented to provide an understanding of its inner operations and how the Epson MX-80 printer control codes are called up. Experienced programmers will find the comments helpful in implementing screen dumps for non-Epson dot addressable printers.

As with most of the programs published in the Companion, Conn's program is not set in concrete. Dissect it, improve upon it, experiment with it, and generally use it as the mother of your own inventions.—bb



;DSCREEN, A SCREEN DUMP UTILITY FOR THE OSBORNE ONE COMPUTER
;BY JIM CONN 3/26/83

ORG 100H

(A)

```
CON EQU 2 ;PRINT CONSOLE BDOS FUNCTION
BDOS EQU 5 ;BDOS ADDRESS
LPTR EQU 5 ;PRINT LST: DEVICE BDOS FUNCTION
CURADR EQU 0EF5AH ;CONTAINS CURRENT CURSOR ADDRESS
CR EQU 13 ;CARRIAGE RETURN
LF EQU 10 ;LINE FEED
MASKL EQU 127 ;FOR MASKING OUT BIT 8
MASKH EQU 128 ;FOR MASKING ALL BUT BIT 8
ESC EQU 27 ;ESCAPE CODE
```

;THE FOLLOWING CODE SEGMENT STORES A SUBROUTINE ABOVE THE
;SYSTEM ROM AREA IN BANK TWO OF MEMORY. THIS ROUTINE CALLS
;ROM ROUTINES WHICH ACCESS AND COPY THE DIM VIDEO ATTRIBUTE
;MEMORY INTO A MORE ACCESSIBLE AREA IN BANK ONE: 6000H-6FFFH

```
LXI H,4000H ;THE LISTING IS FOR A VERSION 1.4 ROM. IF YOU
MVI M,0CDH ;HAVE A VERSION 1.3 ROM, REPLACE THE HEX VALUE
INX H ;ON THE LEFT WITH THE VALUE TO THE RIGHT.
MVI M,0D7H ;1.3 CHANGE (D7) TO (1E)
INX H ;
MVI M,0EBH ;1.3 CHANGE (E8) TO (EC)
INX H ;
MVI M,0CDH ;
INX H ;
MVI M,0EDH ;1.3 CHANGE (ED) TO (10)
INX H ;
MVI M,6H ;1.3 CHANGE (6) TO (7)
INX H ;
MVI M,0CDH ;
INX H ;
MVI M,0E2H ;1.3 CHANGE (E2) TO (2C)
INX H ;
MVI M,0EBH ;1.3 CHANGE (E8) TO (EC)
INX H ;
MVI M,0C9H ;RET INSTRUCTION
```

;FOLLOWING IS THE ASSEMBLER LISTING FOR THE CODE POKE ABOVE FOR REFERENCE ONLY
; VERSION 1.3 ROM VERSION 1.4 ROM
;CALL 0E1EH (SWITCH TO BANK 2) CALL 0E8D7H
;CALL 0710H (MOVE VID. ATTR. MEM. BLK) CALL 06EDH
;CALL 0E2CH (SWITCH TO BANK 1) CALL 0E8E2H

;NOW, BEGIN CODING AGAIN

```
LXI H,0F000H ;START ADDRESS OF VIDEO RAM
LXI D,6000H ;DESTINATION ADDRESS OF VIDEO ATTRIBUTES
LXI B,4096 ;NUMBER OF BYTES TO MOVE
CALL 4000H ;CALL THE ROUTINE WE JUST INSTALLED
```

```
MVI A,ESC ;ESCAPE 64 RESETS THE EPSON PRINTER
CALL OUTPTR ;TO THE POWER UP (NORMAL) STATE
MVI A,64
CALL OUTPTR
```

```
MVI A,ESC ;ESCAPE 61,32,32 MOVES CURSOR TO FIRST
CALL OUTCON ;LINE OF SCREEN DISPLAY
MVI A,61
CALL OUTCON
MVI A,32
CALL OUTCON
MVI A,32
CALL OUTCON
```

```
LHLD CURADR ;LOADS THE CURSOR ADDRESS WHICH IS ALSO
LXI B,0 ;THE STARTING ADDRESS IN VIDEO RAM OF THE
MOV A,L ;FIRST LINE ON THE SCREEN,
ANI MASKH ;MAKE SURE THAT THE ADDRESS POINTS TO THE
MOV L,A ;BEGINNING OF THE FIRST LINE.
```

(C)

(D) MOV A,H ;THIS ROUTINE SUBTRACTS TWO LINES FROM THE
CPI 0F0H ;CURSOR ADDRESS, TO GET THE LINES SCROLLED OFF
JNZ SUBLNE ;BY THE COMMAND LINE TO RUN THIS PROGRAM.

```
MOV A,L
ANA A
JNZ SUBLNE
LXI H,0FF80H
JMP OK
SUBLNE: LXI D,0FF80H ;ADD IN OFFSET WHICH WILL EFFECTIVELY
DAD D ;SUBTRACT 128 FROM CURSOR ADDRESS
OK: INR B
MOV A,B
CPI 2 ;DO THIS TWICE, THEREBY RECOVERING TWO LINES
JNZ LK ;SCROLLED OFF.
```

MVI A,ESC ;NOW, MOVE CURSOR TO THE BOTTOM OF THE SCREEN
CALL OUTCON ;AND OUT OF OUR WAY.

```
MVI A,61
CALL OUTCON
MVI A,55
CALL OUTCON
MVI A,32
CALL OUTCON
```

LXI B,0 ;SET UP B AS LINE COUNTER

```
MVI A,ESC ;ESCAPE 69 TURNS ON EMPHASIZED PRINT
CALL OUTPTR
MVI A,69
CALL OUTPTR
```

LLOOP: MVI A,ESC ;ESCAPE 50 SETS LINE SPACING TO NORMAL
CALL OUTPTR
MVI A,50
CALL OUTPTR

;BEGIN LOOP TO READ AND PRINT 24 SCREEN LINES
PUSH H ;SAVE CURSOR ADDRESS FOR FUTURE REFERENCE

LXI D,0 ;SET UP REGISTER D AS CHARACTER COUNTER

;BEGIN LOOP TO READ AND PRINT UP TO 80 CHARACTERS ON A LINE

CLOOP: MOV A,E ;GET COUNT
CPI 80 ;SEE IF 80 CHARACTERS READ

JZ NXTLN ;IF 80 CHARACTERS READ, GET NEXT LINE

PUSH H ;PRESERVE REGISTERS

PUSH D ;
LXI D,7000H ;FXXX + 7000 = THE CURRENT ADDRESS IN THE
DAD D ;DIM VIDEO ATTRIBUTE STORAGE AREA WE ESTABLISHED
MOV A,M ;EARLIER. GET THE DIM VIDEO ATTRIBUTE, MASK OUT ALL
ANI 12B ;BUT BIT 8. IF Z FLAG NOT SET, DEPART.

JNZ NODIM ;
MVI A,ESC ;Z FLAG IS SET, MEANS CHARACTER IS DIM,
CALL OUTPTR ;SO TURN OFF EMPHASIZED PRINT SO THIS CHARACTER
MVI A,70 ;WILL BE PRINTED LIGHTER.

NODIM: POP D ;
POP H ;NOW, RETRIEVE THE REGISTERS

MOV A,M ;
ANI MASKH ;GET THE CHARACTER FROM THE SCREEN
JZ GOON ;UNDERLINE BIT SET?

GOON: MVI A,ESC ;
CALL OUTPTR ;YES, BIT IS SET, SO SEND UNDERLINE COMMAND
MVI A,45 ;TO THE EPSON.

CALL OUTPTR
MVI A,1
CALL OUTPTR

GOON: MOV A,M ;
ANI MASKL ;GET CHARACTER AGAIN.
CPI 127 ;MASK OUT THE UNDERLINE BIT
JZ DELC ;IS IT A DELETE CHARACTER?

;YES IT IS, SO PRINT IT.



```
CPI 32      ;SEE IF LESS THAN 32, & IF SO, CHARACTER IS A
JNC REGC    ;GRAPHIC. IF NOT, SKIP TO REGULAR CHARACTER OUTPUT.
DELC: CALL PUTGR ;IF LESS THAN 32 OR = 127, SEND GRAPHIC CHAR
JMP NXCHAR  ;NOW, GET NEXT CHARACTER
REGC: CALL OUTPTR ;IS ALPHA, SO SEND IT.
;

NXCHAR: MOV A,M      ;BEFORE WE GET THE NEXT CHARACTER, SEE IF THE
ANI MASKH    ;CHARACTER WAS UNDERLINED-IF SO, TURN UNDERLINING OFF.
JZ NX        ;OTHERWISE, FORWARD MARCH!
MVI A,ESC    ;ESCAPE 45 TURNS UNDERLINING OFF.
CALL OUTPTR
MVI A,45
CALL OUTPTR
MVI A,0
CALL OUTPTR
;

NX: PUSH H      ;SAVE THE BLOOMIN' REGISTERS
PUSH D
(G) LXI D,7000H ;GET THE DIM VIDEO ADDRESS AGAIN BY ADDING OFFSET.
DAD D
MOV A,M      ;GET THE ATTRIBUTE
ANI 128      ;MASK IT
JNZ NDIM    ;IF > 0, NOT DIM, SO BEAT IT
MVI A,ESC    ;IS DIM, SO TURN EMPHASIZED PRINT BACK ON
CALL OUTPTR
MVI A,69
CALL OUTPTR
NDIM: POP D      ;GET THOSE REGISTERS BACK
POP H
INX D      ;INCREMENT CHARACTER COUNTER
INX H
JMP CLOOP   ;GO GOBBLE ANOTHER CHARACTER
;

NXTLN: CALL CRLF  ;80 CHARACTERS READ, SEND A NEW LINE SEQUENCE.
INX B
MOV A,C
(H) CPI 24      ;SEE IF 24 LINES HAVE BEEN PRINTED.
JZ DONE      ;YES, DEPART TO RECEIVE THE LAUREL WREATH OF VICTORY.
POP H
LXI D,MASKH ;NOT DONE, SO GET LINE ADDRESS FROM STACK.
DAD D
MOV A,H      ;PREPARE TO ADD 128 TO IT, WHICH WILL
              ;INCREMENT TO NEXT LINE OF THE SCREEN.
ANA A
JNZ LLOOP    ;SEE IF WE ARE AT THE BOTTOM OF VIDEO MEMORY.
LXI H,0F000H ;NO, SO CONTINUE WITH NEXT LINE
JMP LLOOP    ;YES, SO CONTINUE AT TOP OF VIDEO MEMORY.
;

DONE: MVI A,ESC  ;FINISHED
CALL OUTPTR
MVI A,64
CALL OUTPTR
;

(I) MVI C,0      ;NOW FOR A HOT DATE WITH CP/M
CALL BDOS    ;GOODBYE!
;

CRLF: PUSH H      ;SUBROUTINE TO SEND A CR LF SEQUENCE TO THE EPSON.
PUSH D
PUSH B
PUSH PSM
MVI E,CR
MVI C,LPTR
CALL BDOS
MVI E,LF
MVI C,LPTR
CALL BDOS
POP PSM
POP B
POP D
POP H
RET
;

OUTPTR: PUSH H      ;SUBROUTINE TO SEND A CHARACTER TO THE EPSON.
PUSH D
PUSH B
PUSH PSM
MOV E,A
MVI C,LPTR
CALL BDOS
POP PSM
POP B
POP D
POP H
RET
;

OUTCON: PUSH H      ;SUBROUTINE TO SEND A CHARACTER TO THE CONSOLE.
PUSH D
PUSH B
PUSH PSM
MOV E,A
MVI C,CON
CALL BDOS
POP PSM
POP B
POP D
POP H
RET
;

PUTGR: PUSH H      ;SUBROUTINE TO SEND A GRAPHICS CHARACTER SEQUENCE
PUSH B      ;TO THE EPSON.
PUSH D
PUSH PSM
LXI H,GR0  ;GR0 - GR127 = STORAGE FOR PIN FIRING PATTERNS
CPI 0      ;TO MIMIC THE OSBORNE ONE BLOCK GRAPHICS CHARACTERS.
JZ STIT
LXI H,GR1
CPI 1
JZ STIT
LXI H,GR2
CPI 2
JZ STIT
LXI H,GR3
CPI 3
JZ STIT
LXI H,GR4
CPI 4
JZ STIT
LXI H,GR5
CPI 5
JZ STIT
LXI H,GR6
CPI 6
JZ STIT
LXI H,GR7
CPI 7
JZ STIT
LXI H,GR8
CPI 8
JZ STIT
LXI H,GR9
CPI 9
JZ STIT
LXI H,GR10
CPI 10
JZ STIT
LXI H,GR11
CPI 11
JZ STIT
LXI H,GR12
CPI 12
JZ STIT
```



```

LXI H,GR13
CALL OUTPTR
CPI 13
JZ STIT
LXI H,GR14
CALL OUTPTR
CPI 14
JZ STIT
LXI H,GR15
CALL OUTPTR
CPI 15
JZ STIT
LXI H,GR16
CALL OUTPTR
CPI 16
JZ STIT
LXI H,GR17
CALL OUTPTR
CPI 17
JZ STIT
LXI H,GR18
CALL OUTPTR
CPI 18
JZ STIT
LXI H,GR19
CALL OUTPTR
CPI 19
JZ STIT
LXI H,GR20
CALL OUTPTR
CPI 20
JZ STIT
LXI H,GR21
CALL OUTPTR
CPI 21
JZ STIT
LXI H,GR22
CALL OUTPTR
CPI 22
JZ STIT
LXI H,GR23
CALL OUTPTR
CPI 23
JZ STIT
LXI H,GR24
CALL OUTPTR
CPI 24
JZ STIT
LXI H,GR25
CALL OUTPTR
CPI 25
JZ STIT
LXI H,GR26
CALL OUTPTR
CPI 26
JZ STIT
LXI H,GR27
CALL OUTPTR
CPI 27
JZ STIT
LXI H,GR28
CALL OUTPTR
CPI 28
JZ STIT
LXI H,GR29
CALL OUTPTR
CPI 29
JZ STIT
LXI H,GR30
CALL OUTPTR
CPI 30
JZ STIT
LXI H,GR31
CALL OUTPTR
CPI 31
JZ STIT
LXI H,GR127
CALL OUTPTR

; STIT: MVI A,ESC ;ESC 49,75,6,0 SETS UP THE EPSON FOR A GRAPHICS
CALL OUTPTR ;CHARACTER 6 DOTS WIDE, AND THE EPSON EXPECTS TO
MVI A,49 ;RECEIVE SAME IMMEDIATELY. OF COURSE WE WILL OBLIGE.
CALL OUTPTR
MVI A,ESC
CALL OUTPTR
MVI A,75
CALL OUTPTR
MVI A,6
CALL OUTPTR

```

```

MVI A,0
CALL OUTPTR
LXI B,0
;
LPE: MOV A,M ;GET PATTERN FOR DOTS, ADDRESS IS IN HL REGISTER.
CALL OUTPTR ;SEND THE PATTERN.
INX H
INR C ;C IS THE COUNTER FOR PATTERNS SENT
MOV A,C
CPI 6 ;SEE IF SIX PATTERNS SENT
JNZ LPE ;NO, SEND NEXT PATTERN.
POP PSW ;YES, RETRIEVE REGISTERS
POP D
POP B
POP H
RET ;GRAPHICS CHARACTER SENT, SO RETURN FOR NEXT CHARACTER.
;
;DATA STORAGE FOR DOT PATTERNS FOLLOWS.
;
GR0: DB 255,129,129,129,129,255
GR1: DB 255,255,255,0,0,0
GR2: DB 15,15,15,240,240,240
GR3: DB 15,15,15,255,255,255
GR4: DB 0,0,0,255,255,255
GR5: DB 240,240,240,255,255,255
GR6: DB 15,15,15,0,0,0
GR7: DB 0,0,0,15,15,15
GR8: DB 255,127,63,31,7,1
GR9: DB 0,0,31,31,24,24
GR10: DB 1,7,31,63,127,255
GR11: DB 0,0,255,255,0,0
GR12: DB 24,24,255,255,24,24
GR13: DB 0,24,60,60,24,0
GR14: DB 240,240,240,15,15,15
GR15: DB 24,24,31,31,24,24
GR16: DB 24,24,31,31,0,0
GR17: DB 255,255,255,240,240,240
GR18: DB 240,240,240,0,0,0
GR19: DB 2,4,234,22,47,66
GR20: DB 0,0,0,240,240,240
GR21: DB 128,192,224,248,254,255
GR22: DB 255,255,255,255,255,255
GR23: DB 240,240,240,240,240,240
GR24: DB 15,15,15,15,15,15
GR25: DB 255,254,248,224,192,128
GR26: DB 255,255,255,15,15,15
GR27: DB 24,24,24,24,24,24
GR28: DB 0,0,248,248,24,24
GR29: DB 0,4,232,21,43,77
GR30: DB 24,24,248,248,24,24
GR31: DB 24,24,248,248,0,0
GR127: DB 170,85,170,85,170,85
;
END

```

J

MBASIC screen dump routine

Jim Conn

Exiting to CP/M in order to use this screen dump utility may at times be a little unwieldy. For convenience and ease of use, here are instructions and modifications that run the program directly from the June issue's "Graphic Illustrations" 3-D bar graph program. The assembly language HEX file is called up from within the MBASIC program and runs as a subroutine. Naturally, the principles involved may be incorporated into other programs.

The shaded areas in the assembly program listing must be changed (as described next) in order to call it up from the bar graph program. The letters reference the deletions, alterations, or insertions to the assembly program.

A) Replace with 0C000H

B) Replace with:

```
POP D
LXI H, RETRN
MOV M, E
INX H
MOV M, D
LXI H, 0F000H
LXI D, 0B000H
LXI B, 4096
CALL 0E8D7H ;1.3 = 0EC1EH
CALL 06EDH ;1.3 = 0710H
CALL 0E8E2H ;1.3 = 0EC2CH
```

C) Delete

D) Delete

E) Change to print other column widths

F) Change to 0C000H

G) Change to 0C000H

H) Change to print more lines of video memory (1-32)

I) Replace with:

```
LXI H, RETRN
MOV E, M
INX H
MOV D, M
PUSH D
RET
```

J: Replace with RETRN: DS 2

The second part of this section shows the additions needed in William Burkett's bar graph program.

Assemble the program as normal, but this time we're interested in using the HEX file, not the ASM file.

Finally, change Burkett's bar graph program by adding the following additional code. DSCREEN.HEX is loaded into memory; the load address is read in from the HEX file and is based on where the assembly routine is ORG'ed. Be patient—loading the HEX file takes about 30 seconds.

(Note that lines 640 through 720 are replaced in Burkett's original program with new code.)

```
10 PRINT CHR$(26)
20 PRINT "ONE MOMENT - LOADING ASSEMBLY ROUTINE..."
30 GOSUB 1000 'Call Loader subroutine

-- insert Burkett's 3-D bar graph program --
Lines 100-630

640 PRINT DC$;"7"
650 A2A = $HC000 'Address of assembler screen
670 CALL A2A 'dump routine.
680 PRINT CHR$(26)
690 INPUT "CREATE ANOTHER GRAPH? (Y/N): ", ANNS$
700 IF ANNS$="Y" OR ANNS$="y" THEN 100 ELSE END
1000 FI$="DSCREEN.HEX" 'B:DSCREEN.HEX if on B drive
1010 OPEN "1", #1, FI$
1030 INPUT #1, GI$
1040 IF MID$(GI$, 2, 2)="00" THEN 1240
1050 MI$=MID$(GI$, 4, 4)
1060 DD$=MID$(GI$, 10, LEN(GI$)-11)
1070 QQ=ASC(RIGHT$(MI$, 1))-48:IF QQ>9 THEN QQ=QQ-7
1080 ZZ=QQ
1090 QQ=ASC(MID$(MI$, 3, 1))-48:IF QQ>9 THEN QQ=QQ-7
1100 ZZ=ZZ+(QQ*16)
1110 QQ=ASC(MID$(MI$, 2, 1))-48:IF QQ>9 THEN QQ=QQ-7
1120 ZZ=ZZ+(QQ*256)
1130 QQ=ASC(LEFT$(MI$, 1))-48:IF QQ>9 THEN QQ=QQ-7
1140 ZZ=ZZ+(QQ*4096)
1150 FOR KK=1 TO LEN(DD$) STEP 2
1160 B$=MID$(DD$, KK, 2)
1170 QQ=ASC(RIGHT$(B$, 1))-48:IF QQ>9 THEN QQ=QQ-7
1180 RR=QQ
1190 QQ=ASC(LEFT$(B$, 1))-48:IF QQ>9 THEN QQ=QQ-7
1200 RR=RR+(QQ*16)
1210 POKE ZZ, RR:ZZ=ZZ+1
1220 NEXT KK
1230 GOTO 1030
1240 RETURN
```

MBASIC must be initialized with the highest memory location that will be used by MBASIC before running the bar graph program. Here's how:

A) MBASIC /M:\$HFFFF

That's it!

Random number generation

*Chaos returns
to ordered sequences*

Karl O. Karlgaard

Many of the games currently being played by owners of Osborne 1 computers were either keyed in from magazine listings or obtained from user group libraries like that maintained by the First Osborne User Group. A large proportion of these games are written in MBASIC.

Although a popular (as well as powerful) language, the MBASIC version bundled with the Osborne 1 has one quirk that's enough to drive many hackers crazy—it has this strange way of generating random numbers.

The function within MBASIC that produces these numbers is actually a pseudo-random number generator, since it comes up with the same sequence when the seed doesn't change. While that is a plus when a programmer is trying to work the bugs out of a program, it certainly doesn't add any suspense to a game that relies on random numbers for changes in operation.

One obvious answer is to have the program request a new seed for each game, hoping that the player will input a different one each time the program is run. This method isn't the best for several reasons.

First of all, it is a pain to have to go through the process of typing in a new number each time. Isn't this a computer, after all, and aren't they supposed to take away all this drudgery?

In addition, this procedure slows things up right from the start. When most players would rather be getting into the game, they have to type in this seed thing. A person who isn't familiar with a computer might think it's some sort of agricultural conspiracy.

Then too, we really haven't solved the problem of duplicate seeds, since we are leaving it up

to the players to input a number. What's to stop them from inputting the same thing time after time? Even with a fairly complex program, a few times through would probably enable an intelligent player to beat the system. After that happens the game isn't much fun to play anymore.

Another possibility is to have the player input his or her name and use the ASCII value of one of the letters as the seed. This keeps the player from knowing that he or she is responsible for the seed, but has many of the same problems outlined above. Obviously there must be a better way.

One day while I was working with MBASIC data files the answer became obvious: I could have the computer store the random number seed. Here's what happens: a short sequential file is created with only one thing in it—a number that is the random number seed. Each game program (or any other program requiring a random number)

incorporates a short routine that inputs a number from a file, uses it as a seed, then adds one to it and returns the new number to the file.

The sequential file is created using the "N" command from the No-file menu in WordStar. Just type N and name the file RANDOM.DTA when asked. Then type the number -30000 (that's negative 30000) and ^KX to save the file and exit. There is now a file named RANDOM.DTA containing just one number on diskette.

PIP.COM can be used to move this file to any MBASIC game diskette. Only one file is needed on any of the diskettes containing games, since each one of the game programs requiring a random number seed can use this same file.

The next step is to incorporate the following small routine in each of your programs in place of the section asking for the random number seed. The listing is shown below.

```
100 'THIS SEQUENCE OPENS A FILE CONTAINING A SEED
110 'NUMBER FOR THE RANDOM NUMBER GENERATOR, INPUTS
120 'THE NUMBER, ADDS ONE TO IT AND RETURNS THE NEW
130 'NUMBER TO THE FILE
140 '
150 '
160 '
170 '
180 '
190 OPEN "I", #1, "B:RANDOM.DTA"
200 INPUT #1, SEED
210 CLOSE #1
220 RANDOMIZE(SEED)
220 SEED=SEED+1:IF SEED=>30000 THEN SEED=-30000
230 OPEN "O", #1, "B:RANDOM.DTA"
240 PRINT #1, SEED: CLOSE #1
250 ' END OF ROUTINE
```

The working parts of the routine (and all that needs to be put into your program) are the lines between 190 and 240. Colons could be used to put several of the statements on the same line, making the listing even more compact.

At line 190, the program opens the file RANDOM.DTA on the B drive. If the routine opens a file on A, the drive identifier won't be needed. The number in the file is input at line 200 as SEED and the file is closed.

The number is used as a seed in line 220 and one is added to it in the next line. A check has been added to see if the number is getting too large to use as a seed. When that happens the program resets the number to -30000 and we're ready to play another 60000 games. (Numbers between -30000 and +30000 are used here since the random number generator requires seeds in a range slightly larger than that.)

After seeding, the file is opened (erasing the number which was there) and the new number SEED is printed to it. At this point control returns to the original program.

The routine could also be added as a subroutine, which would be easier in some programs. If that's the best situation, replace lines in the program that ask for the seed with something like this:

```
<line number> GOSUB 10000
```

Then the routine itself would be coded starting at line 10000 with a RETURN statement added at the end.

In any case, if a variable other than SEED is used, be sure it is one that isn't used anywhere else in the program. One of the reasons for using that particular variable name is that it's not likely to be found anywhere else in an MBASIC program.



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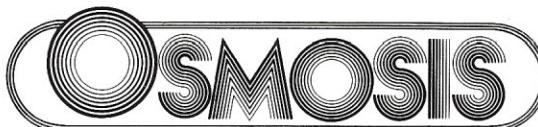
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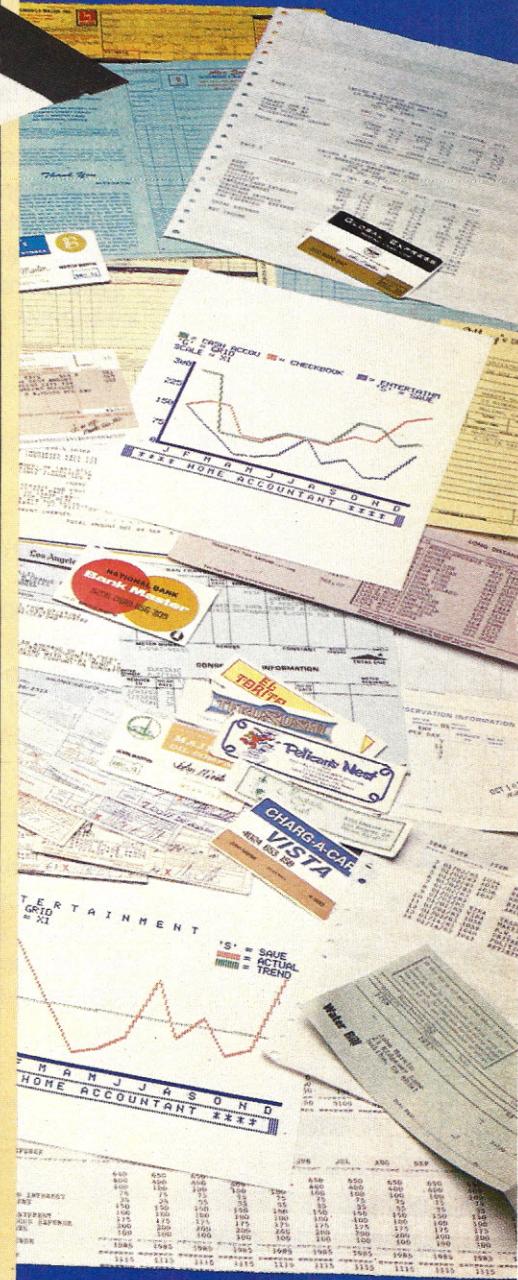
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Logs and antilogs

David A. Paul

When I first learned that Microsoft BASIC supported only natural logarithms, I was quite disappointed, because I personally am more familiar with the base 10, or common, logarithms.

It didn't take long to realize, however, that I was sitting at the keyboard of a computer, and that little things like the conversion of logarithmic bases are quite easy for the machine to perform. Not only that, my Osborne 1 "remembers" very well, and never gets confused, as I sometimes do, as to just what quantity gets divided by what other quantity, to achieve the desired result.

There are two primary applications for logarithms that I encounter frequently: (1) Power and voltage calculations using decibels, and (2) Financial calculations for compound interest and annuities.

Generally, dB calculations are of the form:

$$\text{dB (Gain)} = 10 * \log_{10} (\text{Power}_{\text{OUT}} / \text{Power}_{\text{IN}})$$

or...

$$\text{dB (Gain)} = 20 * \log_{10} (\text{Voltage}_{\text{OUT}} / \text{Voltage}_{\text{IN}})$$

If any two of the three variables are known, the third one can be determined with some algebraic manipulation and a method to evaluate the logarithm or antilogarithm.

A typical financial calculation would be trying to determine the Future Value of a Present Amount, if this amount were invested at $i\%$ interest for N periods. The expression for this is given by:

$$\text{FV} = \text{PV} * (1 + i\%)^N$$

Raising the $(1 + i\%)$ term to the N th power and evaluating it are both easily accomplished with the use of logarithms and antilogarithms.

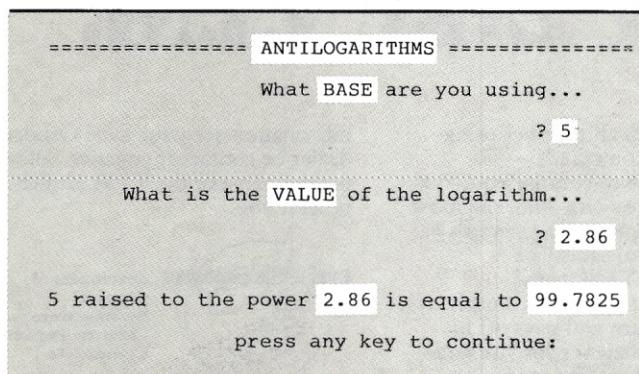
Actually, due to the prevalence of scientific calculators, very few of us have any need to work with logarithms directly. This program was written for those isolated occasions when it is necessary.

```
===== LOGARITHMS =====
What BASE would you like to use...
? 8
For what NUMBER is the logarithm needed...
? 450
The logarithm of 450 to the base 8 is: 2.93793
press any key to continue:
```

```

1000 E$=CHR$(27):'program title is B:LOGS.BAS
1010 CLS$=CHR$(26):'clears the screen and homes the cursor
1020 BD$=E$+CHR$(41):ED$=E$+CHR$(40):'BEGIN/END dim characters
1030 PRINT CLS$
1040 MARG$=STRING$(10,61):TITLE$=" LOGARITHMS / ANTILOGARITHMS "
1050 PRINT MARG$;BD$;TITLE$;ED$;MARG$
1060 PRINT:PRINT:PRINT:PRINT
1070 PRINT TAB(8)"Would you like to find a Logarithm ?"
1080 PRINT:PRINT:PRINT TAB(25)BD$;"If so, press ";ED$;"<L>..."
1090 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
1100 PRINT TAB(11)"If you want an Antilogarithm,"
1110 PRINT:PRINT:PRINT TAB(29)BD$;" press ";ED$;"<A>..."
1120 Q$=INKEY$:IF Q$="" THEN 1120 ELSE 1130
1130 IF Q$="L" GOTO 1180
1140 IF Q$="1" GOTO 1180
1150 IF Q$="A" GOTO 1310
1160 IF Q$="a" GOTO 1310
1170 GOTO 1030
1180 PRINT CLS$
1190 MARG$=STRING$(19,61):TITLE$=" LOGARITHMS "
1200 PRINT BD$;MARG$;ED$;TITLE$;BD$;MARG$;ED$;
1210 PRINT:PRINT:PRINT
1220 PRINT TAB(8)BD$;" What ";ED$;"BASE";BD$;
" would you like to use...";ED$;
1230 PRINT:INPUT" ";B
1240 PRINT:PRINT
1250 PRINT BD$;"For what ";ED$;" NUMBER ";BD$;
" is the logarithm needed...";ED$;
1260 PRINT:INPUT" ";N
1270 L=LOG(N)/LOG(B)
1280 PRINT:PRINT:PRINT:PRINT
1290 PRINT BD$;"The logarithm of ";ED$;N;BD$;
" to the base ";ED$;B;BD$;" is:";ED$;L
1300 GOTO 1440
1310 PRINT CLS$
1320 MARG$=STRING$(17,61):TITLE$=" ANTILOGARITHMS "
1330 PRINT BD$;MARG$;ED$;TITLE$;BD$;MARG$;ED$;
1340 PRINT:PRINT:PRINT
1350 PRINT TAB(12)BD$;" What ";ED$;"BASE";BD$;
" are you using...";ED$;
1360 PRINT:INPUT" ";B
1370 PRINT:PRINT
1380 PRINT BD$;"What is the ";ED$;" VALUE ";BD$;
" of the logarithm...";ED$;
1390 PRINT:INPUT" ";V
1400 N=EXP((LOG(B))*V)
1410 PRINT:PRINT:PRINT:PRINT
1420 PRINT B;BD$;"raised to the power:";ED$;V;BD$;
" is equal to:";ED$;N
1430 GOTO 1440
1440 PRINT:PRINT:PRINT:PRINT
1450 PRINT TAB(25)BD$+"press any key to continue..."+ED$;
1460 IF INKEY$="" THEN 1460 ELSE 1470
1470 GOTO 1000

```





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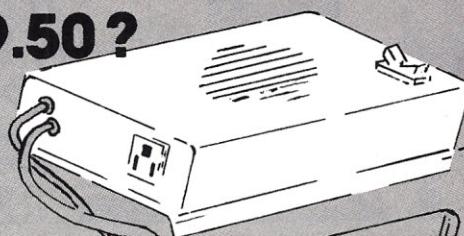


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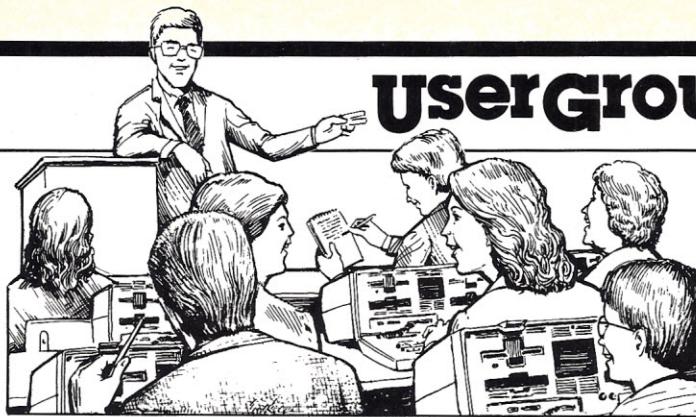
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A Question Answered

Dr. Craig Feied

QUESTION:

Should I use the serial port or the parallel port of the Osborne to drive my printer?

ANSWER:

Serial communications protocols came about because computers used to be physically very remote from their users. They were either at the end of a telephone hookup, or many miles away by direct wire connection, or at the best down in the basement of the building. It was inconvenient to run as many wires as there were bits to a word (for us micro users that means 8 bits or one BYTE) plus one to indicate when ready to send or receive, plus one to request transmission, and so on and so on. Luckily a method was soon established (actually stolen from an early telegraph signal pro-

toocol that never caught on) to send information over a single pair of wires one bit at a time, and serial computer communications was born.

It should be obvious that serial transmission of data is intrinsically much slower than parallel, since the computer and printer have to deal with (in our case) roughly eight times as many packets of information when they handle each bit separately. In fact, the computer's serial port hardware and software translate the internal information from parallel to serial before sending it, and then the printer translates it back into parallel before printing it.

That's why you pay more for a serial interface on your printer, and to me it seems just plain stupid! Over the years a number of handshaking protocols were developed to ensure no data was lost. Nowadays on some systems higher data transfer rates are supported using serial than using parallel transmission, but

this is not true for the Osborne.

For microcomputer owners, most of whom keep the printer only 6-8 feet away from the computer, parallel is easiest as well as most error-free and cheapest. On many small printers use of the serial port requires the purchase of an extra 2K memory buffer to get it to work correctly at any but the slowest speeds—and the dealers often spring this on you as a surprise after you've bought the printer, serial cables, etc.

Personally, I reserve my serial port for peripherals that need serial, like my modem and my video terminal (I use a Hayes Smartmodem and an Adds Viewpoint).

Editor's note: Hard disks require use of the parallel port.

Reprinted from the Nov. 1982 Tradewinds, the newsletter of the Osborne Hawaii User's group.

BASCOM. REV

Robert A. Feldman

MBASIC, which is part of the software package that comes with the Osborne 1, is what is known as an "interpreted" BASIC. Each time you run a program, the computer has to look at each line as it comes to it

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and interpret, or translate, it into machine instructions. Thus, if the program has a subroutine or a FOR/NEXT loop used 1000 times, the computer must translate each line 1000 times during the running of the program. Furthermore, variables in MBASIC are stored in a list, which must be searched each time the variable is referred to.

CBASIC, on the other hand, is a "compiled" BASIC (actually a partially compiled language, since it creates an INTermediate code). Before a CBASIC program can be run, you must pass it through a program (CBAS2.COM) that takes the CBASIC source program and converts it into machine code (the intermediate program in the case of CBASIC or object program for a true compiler). However, this process only needs to be done once and it is done before the program is run. Thereafter, when the object program is run (in conjunction with another CBASIC program called CRUN2.COM), every line has already been translated. In a true compiled language, the resulting object program can run much faster.

As should be expected, there is a price to pay for the speed you gain with a compiled language: it is

harder to write and debug a program. In MBASIC, you can run the program (or parts of the program) after it's written, and any errors will show up right away. The errors can be fixed and quickly checked. In CBASIC, however, the program must be compiled before it can run. You must fix any errors in the source program that prevent it from compiling, compile the program, then run the INT program, go back to the source program to correct any bugs, recompile, and so on. In addition, although there are many similarities between the two languages, writing a CBASIC source program is significantly different from writing an MBASIC program.

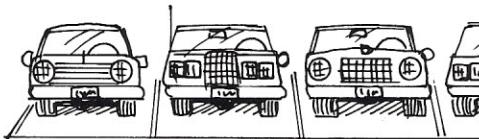
Wouldn't it be nice if you could take your debugged and running MBASIC program and compile it so it runs faster (so your game's graphics move faster than a dead snail, or your matrix calculates with reasonable speed)? If you are willing to part with \$300 or so, there is such a program, called the Microsoft BASIC Compiler, or BASCOM.

What you get for your money is a compiler (BASCOM.COM) that will take a standard MBASIC program (except for a few differences that will be discussed below) and compile it into "relocatable" code.

(a .REL file), a "linking-loader" (L80.COM) that takes the REL code and links it to routines (in BASIC.LIB.REL) and to the "runtime module" (BRUN.COM). You also get some other utility programs and one (M80.COM) that allows you to include assembly language subroutines in your program. (You can even buy a separate FORTRAN compiler and mix BASIC and FORTRAN in your object program.) BASCOM claims that your programs will run faster (definitely, but probably not up to the 20 times faster they claim) and take up less memory (maybe, but not so for the few programs I have compiled). Besides speed in running, the object programs load faster, so if your accounting system chains from one program to another, it will do so more quickly after it has been compiled.

There are a few differences between regular MBASIC and the version that can be compiled. The main difference I have found is that you cannot redimension a variable, i.e. only one DIM statement is allowed for each variable, and it should be placed before that variable is first used (otherwise the program will assign the default dimension [10] and the DIM statement will

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generate an error). As a result, you cannot use CLEAR or ERASE to redimension variables in the middle of a program. This problem can often be avoided simply by assigning a high enough subscript value at the start. Finally, values of subscripts in dimensioned variables must be integer constants, not variables or arithmetic expressions.

CHAINing between programs is somewhat more restricted, as is the passing of variables with COMMON and the use of RUN. You can use REM's more freely in writing your source program, since they are stripped off in compiling and thus do not take up any time or space in the object program.

To get the greatest increase in speed and decrease in memory use, variables should be defined as integers and array variables assigned the smallest dimension wherever possible.

When you run a BASCOM compiled program (which has the file extension.COM), BRUN.COM must be on the disk. BRUN.COM takes up 16K of disk space, but need be present only once (i.e. each compiled program does not need to contain its own runtime module).

To compare speed and size, I have compiled several programs.

While there was no significant decrease in program size, there were definite increases in speed of execution. For example, BENCHMRK.BAS, a Sieve of Eratosthenes program to compute the prime numbers between 1 and 1000, took 14 minutes 11 seconds, while the compiled version took only 4:35, a 3x increase in speed. Similarly, JETSIM.BAS, a flight simulator program with several arithmetic subroutines and a lot of screen display, also ran about three times faster, greatly enhancing the quality of the simulation. PILLBOX.BAS, a game from the CFOG library, took between 20 and 50 seconds (35 seconds on average) to redraw the screen for each "duel," while the compiled version took only 5 to 9 seconds (6.5 seconds average), or better than 5 times faster, turning what was a deathly slow game into a quick and interesting one. A similar increase in speed was achieved with LIFE.BAS, although its extensive use of ERASE and redimension statements created bugs that I have not bothered to take the time to fix.

I recommend that you use the option to first compile a program without generating an output (.REL) file or listing (.PRN) file. Doing this allows you to quickly check for bugs

that cause compiler errors without using any disk space. Even when you do the actual compiling, I still recommend not creating the PRN file, as it takes a lot of disk space (several times more than the source program), creating a problem even with double density.

There is at least one quirk of BASCOM not mentioned in the manual. One program I compiled used "AS" as a variable name, which resulted in an "illegal function call" error. My guess is that BASCOM thought "AS" was "ASC," the MBASIC function that returns the ASCII value of a string character. Changing AS solved the problem.

In sum, I found BASCOM to be easy to use (and a sample program that you can practice on is included). I also found it very useful. Whether it is worth \$300 to gain the speed of execution it gives is something you will have to decide. Its needing BRUN.COM to run a program means that a compiled program cannot be put in the CFOG library with the expectation that most members will be able to use it, but the MBASIC source program is runnable by all Osborne I owners.

Reprinted from PIP, the newsletter of the Chicago First Osborne Group.

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Using the IDS/ Microprism 480 Printer

Tom Jakubowski

Using the Microprism printer for your Osborne computer can be a gratifying experience, especially when you have need for several of the machine's capabilities not found on other low cost, dot-matrix printers. For example, when using WordStar, you can utilize the proportional printing capability, which makes your correspondence look quite professional. This article will deal with setup and installation of this printer on your Osborne.

Horror Stories

My first attempt to use the printer was not successful; gibberish would spew onto the printed page, certainly not what I had typed in WordStar. A simple review of the setup program on the CP/M disk told me that the disk must be configured for serial (RS 232) communications, and since I wanted speed, at 1200 baud. Likewise, the DIP switches on the printer were to be

configured in this manner. The IDS 480 manual is quite precise in describing how this should be done, so I was able to get the printer up and running reasonably well.

When using it with WordStar, I found that most of the special printer toggles work, but not all. Here comes the horror story. Part of the installation requires dealer assistance, but since I had purchased my printer in California, but lived in Illinois, the local Computerland dealer refused to help. Feeling that I didn't need them anyway, I called IDS's toll-free hotline. The people there seemed to be most helpful for things relating to the printer proper, but the interface was up to me. It took a month of on-and-off-again effort to get my investment up and running. This article is a summary of what I learned.

First, you should run SETUP as described above. Then perform the series tests that the Osborne User's Reference Guide suggests. These tests will show you which functions work and which don't. It will also help you decide which functions are important and which are not. Subscript, superscript, alternate character pitch, and ribbon toggle do not work. Also, there is no way to access proportional spacing, justifica-

tion and expanded character mode on the printer without extensive modification to WordStar.

The WordStar modification section in the *User's Guide* gives helpful hints on the mechanics of this modification, but how you go about it is important. Basically, you will be modifying the HEXCODE values in the numerical addresses of WordStar. Each address, expressed as a hexadecimal number, contains a hexadecimal value. Values for the different functions of the IDS printer are given in the instruction manual and should be referred to often. The table in Figure One (next page) lists the hexcode addresses and the values to be assigned to them.

By making these modifications, you will be able to use almost all of the special features of the IDS 480 printer.

The IDS people indicate that you will not be able to use proportional spacing with WordStar. This is technically true, but with the following shortcut, you will be able to use proportional spacing with both the right and left margins justified.

The User Function 3 (^PE) throws an escape code to the printer. With this escape code, you can set your printer margins independent of WordStar. By typing in ^PE J,0,720,\$

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System "Road Map" Guide	YES	NO	NO	NO	NO	NO
Free Users' Newsletter	YES	NO	NO	NO	NO	NO
Source Code Included At No Extra Charge	YES	NO	YES	NO	NO	NO
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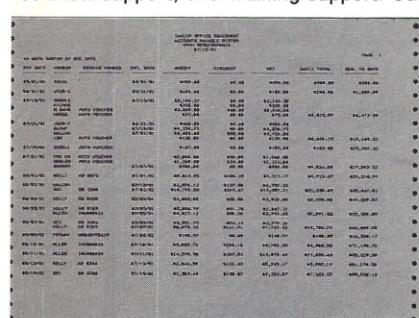
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6. Balance Sheet	13. Trial Balance Statement
7. Balance Sheet with prior year comparison	

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Module	SD	DD	5Mb	10Mb	15Mb
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	500	1,000	6,000	12,000	18,000
Accounts Receivable					
Customers Transactions	200	400	400	400	400
	400	800	6,000	12,000	18,000
Accounts Payable					
Vendors Transactions	200	400	400	400	400
	400	800	6,000	12,000	18,000
Payroll					
Employees	200	400	400	400	400

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Requires either CP/M® or MS-DOS (PC-DOS); MBASIC for CP/M®, BASIC for MS-DOS: 56K to 64K RAM; 2 Disk Drives or Hard Disk; at least 200K of Mass Storage (we recommend more); 132 column printer (an Epson MX-80 or similar printer with compressed mode is acceptable); call for exact requirements on specific systems.

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NAME	HEX ADDRESS	VALUE	DESCRIPTION
BLDSTR:	0691 H	03 H	Boldface strikes
DBLSTR:	0692 H	02 H	Doublestrikes
PSCRFL:	0696 H	02 H	Advance to next line
	0697 H	0D H	
	0698 H	0A H	
PSCR:	06A1 H	02 H	Return Carriage for overprint
PBACKS:	06AF H	01 H	Backspace
PALT:	06B5 H	01 H	Alternate Char.Sequence ('PA)
	06B6 H	1D H	10 Char/inch
PSTD:	06BA H	01 H	Standard Char pitch.('PN)
	06BB H	1E H	12 Char/inch
ROLUP:	06BF H	01 H	Superscript('PT)
	06C0 H	19 H	Vert Adv up
ROLDOW:	06C4 H	01 H	Subscript ('PV)
	06C5 H	04 H	Vert Adv down
USR1:	06C9 H	03 H	User Defined('PQ)
	06CA H	1E H	12 Char/inch
	06CB H	04 H	Justify On
	06CC H	10 H	Proportional Spacing
USR2:	06CE H	03 H	User Defined('PW)
	06CF H	06 H	Fixed Spacing
	06D0 H	05 H	Justify off
	06D1 H	1E H	12 Char/inch
USR3:	06D3 H	01 H	User Defined ('PE)
	06D4 H	1B H	Escape Code
RIBBON:	06DD H	01 H	User Defined('PY)
	06DE H	01 H	Expanded Char
RIBOFF:	06E2 H	01 H	User Defined
	06E3 H	02 H	Normal Print

Figure 1

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you will be setting the printer to 0 LEFT MARGIN, and $720/120 = 6$ inches to the right. Use 'OR in WordStar to set your RIGHT margin, then use 'B to reform each paragraph to a line width about 85% to 99% of what your printer width is. As an example, with the printer set as given above, your right margin in WordStar should be set to 60, assuming your character pitch is 10 char/inch. In this way, neither WordStar nor your printer will be fighting each other at the end of each line. Also, when composing in WordStar, use the "D" option.

Alterations such as those I have proposed will let you use alternate character pitch (10 cpi and 12 cpi, 16 cpi if you wish), expanded character mode, right and left justification, proportional spacing, and escape code for utilization of such nice features as alternate line spacing (4,5,6,7,8, or 10 lines per inch

rather than the standard 6 lpi); left and right margins; form length; and software selection sets. I hope these suggestions will be useful to you when interfacing your printer. □

Reprinted from PIP, the newsletter of the Chicago First Osborne Group.

Screen.PAC

Jim Hanlon

Although I don't have my 80 column upgrade yet (soon though, right George?), I have come across a handy program that I will use as soon as I do get it. If you type it in (using the 'N' option in WordStar), assemble and LOAD it, you will have the ability to change your screen width at will, without going through the SETUP routine. See Figure One for the program.

The program as shown will set your screen to 52 columns—why not call it "52.COM." To get "80.COM" and "104.COM," just substitute the following values for the zero in the second line of the program and rename the file and reassemble/load it with the new name. The values are: 3 (for 80 column) and 1 (for 104 column).

```
ORG 100h
MVI A,0
LXI H,0E1A5h
MOV M,A
CALL 0E4E5h
MVI C,0
CALL 5
END
```

The beauty is that these small files (1K each) can be kept on each disk and you can change your screen just by typing "80." For many of you, it will also introduce you to ASM.COM and LOAD.COM. □

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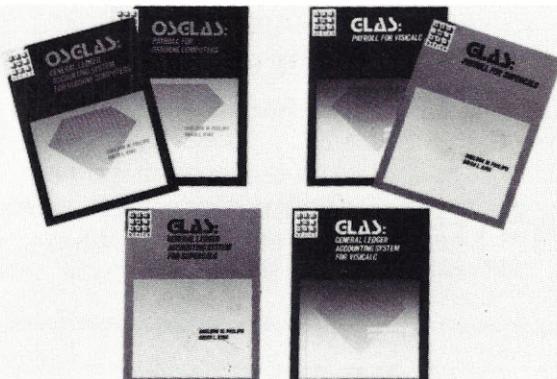
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The Processed Word

Computerized writers unite

Barbara Elman

Everyone who owns a computer seems to be a writer these days. Everybody, that is, who can wax eloquent over the feeding habits of the great electronic beast, or explain the impact of the Computer Revolution to housewives in 1500 words or less. Writing *about* your computer on your computer has become America's newest pastime, and even your processed words can appear in *Reader's Digest*, *Writer's Digest*, or *Science Digest*. (Maybe even *Portable Companion*!)

Consider this: three years ago the computer science shelves at your local library held a few textbooks only an engineer would read in bed. Now every computer store looks like a bookstore, with racks full of volumes touting the wonders of WordStar, demystifying dBase II, telling all about telecommunications. You've read the book, now play the software.

This is not surprising when you realize that each new computer owner buys at least ten books to

supplement the hardware and software manuals that come with each machine. Then there are the user's magazines, newsletters and local support groups, all with words of wisdom. Even database networks like The Source and CompuServe include subscriber-written publications, which review software and the esoteric side of communicating by computer.

So the time is ripe for computer journalists, before we all step on each other's toes. Every New York and Silicon Valley publisher is courting anyone who can translate technical manuals into plain English for the rest of us or has a fresh approach to choosing a computer. *Publisher's Weekly*, the bible of the book publishing field, has devoted several issues this past year to the array of computer titles filling the publishers' catalogues. Cloverdale Press, a prestigious book packaging firm, has contracts with major publishers to produce lines of computer books this year. They are also producing

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Send a copy of your CP / M-80 Wordstar disk and C.I. Software will modify it so you can get the most from your printer. For example with the C Itoh Prowriter I or II, NEC 8023A, or any DMP-85, this printout shows what you'll gain:

You may mix the ASCII, Greek, or Graphics character sets, superscripts, and printer generated boldprint and underlining in any combination while still maintaining proper automatic right margin justification.

You also have access to everything else that your printer and Wordstar can do, including setting and executing tabs, double width, etc., except bit image graphics, the vertical format unit, and right margin justification with the proportional type face.

Adding HexPrintR gives you access to the vertical format unit and bit image graphics.

Other printers will gain different capabilities. Call or send for details. All installations include WordStar generated Double Strike, Boldface, Double Boldface, underscore, and strikeout.

You will receive documentation, a summary of easy to use printer control codes and a test print file, and do-it-yourself reinstallation instructions. Note that the program HexPrintR is an optional extra which enhances some installations. Compare these features with what you would like and what you've been able to get so far.

Osborne owners also receive a Printer Busy Test which lets them easily edit any file while simultaneously printing (but not merge-printing) a document. Installations for other printers are under development, and C I Software does listen to requests.

HexPrintR gives the WordStar printer control character ^R the same power as the BASIC statement LPRINT CHR\$(n) in a much easier to use form, using either hex or decimal notation. For example:

^R 10, 15, 20 ^R

in a file printed by WordStar with HexPrintR installed it would have the same effect on the printer as the BASIC program statement:

LPRINT CHR\$(10);CHR\$(15);CHR\$(20);

HexPrintR may be purchased separately.

PRINTERIZATIONS AVAILABLE FOR:

- C Itoh Prowriter I or II
- NEC FO-8023A
- Other DMP-85
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several magazines for Warner Communications, who are entering the computer field full force. For consideration as an editor or writer on their projects, contact Jeffrey Weiss at Cloverdale Press, 133 Fifth Avenue, New York, NY 10003. Send samples of your work and previous credits.

Computer firms have also wised up. Some, like Osborne, have enlisted creative writers and journalists to sweeten the documentation and write marketing copy that sells to business people as well as computer enthusiasts. Also, by publishing magazines like the *Companion*, they provide a forum and a market for those who know the products best, the end user.

Most writers who enter the computer arena get a taste of all types of writing. Stan Miastkowski, former technical editor of *Popular Computing*, began his career writing manuals and now finds book publishing is where it's at. "The greatest thing about writing books is the bottom line potential. The average McGraw-Hill book on a computer system or general guide to software, for example, can earn its writer royalties of six figures over the life of the book, which can be two to three years. So it can be quite lucrative.

"Article payment is another story," he advises. "Magazines pay anywhere from five cents to fifty cents a word, although it tends to be at the lower end of the scale for new writers. Get into books; there's a great market in books that explain what the manuals don't."

Most computer magazines are willing to give new writers a chance, if they exhibit an inventive point of view and provide samples of their work. Remember that they need to fill the pages between the ads every month, and appreciate talent when it comes along. To break into print on the newsstands, read everything that exists on your favorite topic and find a voice of your own. If you have an area of expertise or special sub-

ject you're burning to cover, write to the magazine editor for Submission Guidelines. Include a self-addressed stamped envelope (the good old SASE) for fast reply.

Write a "letter to the editor" if your thoughts differ from a current article or you discover a unique program or subject. Even the established magazines like *BYTE*, *Popular Computing*, *Personal Computing* and the newsweekly *InfoWorld* have "Letters to the Editor" columns, and it's a way to begin getting your name into the computer pages (though not a way to make a living at it).

Aside from *Portable Companion* as the magazine for Osbornites, a new magazine has appeared which covers portables of all types and sizes. *Portable Computer* is published by Miller-Freeman Publishing, 500 Howard St., San Francisco, CA 94105. Len Grzanka is Managing Editor; send query letters and samples of your work to his attention.

Publishing yourself is another way to immortalize your words and make a living at it. My *WP NEWS* has given me a chance to hone my craft, write for space limitations and all-too-soon deadlines, and get fan letters in response from readers. There is nothing like positive feedback for your work to get you back at the CRT screen churning out the next issue. With computers you can easily write, polish, and print your own newsletters, even plug into typeset by phone to save time and money.

As the field of computer writing becomes filled with more of us, the need for networking, referrals and references becomes essential. To meet this need, writers from both coasts are joining forces, forming an association of pros covering computers for trade and consumer press, TV and radio, book and documentation publishers. Tentatively called *Computer Writers of America*, this official grapevine began in New York around the lunch table, when several computer writers met regularly to exchange

notes and job referrals. Now a national network has emerged, with a directory of members, computer firms and publications being compiled. A hard-copy newsletter is in the works, possibly supplemented by electronic publishing to conference by phone. For details, contact me at 211 E. Olive #210, Burbank CA 91501.

Finally, software has appeared to help you keep track of the articles and book proposals you are now ready to submit far and wide. WRITE TRACK (from Graydan Consulting, POB 3594, Thousand Oaks CA 91359: \$100.00) was designed by Marilyn Gratton, who got tired of keeping track of her submissions the old fashioned way—on file cards. Knowing her Osborne could handle the job, she worked with a programmer friend to customize a database system that progresses from initial data entry through report printing, with details of sales dollars and printing/postage expenses listed as well. You can recall submissions by article and/or publisher, and sort your publishers' list in alphabetical order with notes of market specifics, editors' names and foibles (like how fast they pay, or whether the editor dislikes dot matrix print-outs).

So instead of taking us farther away from the quill and parchment, electronic writing tools have given us a new field to write about while easing the typing task. As Phillip Brooks wrote, "Life comes before literature, as the material always comes before the work. The hills are full of marble before the world blooms with statues."

With computer users writing about their magic machines, and writers adopting computers to replace typewriter or pad-and-pen, literacy seems to increase instead of fade away. In the process of expressing ourselves in print, we also help make computers less mysterious and confusing for our yet-to-be-computerized friends—for fun and profit.

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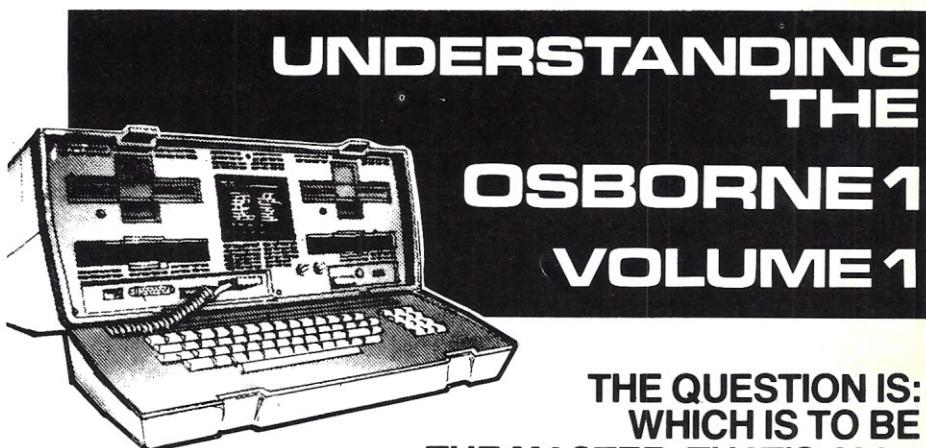


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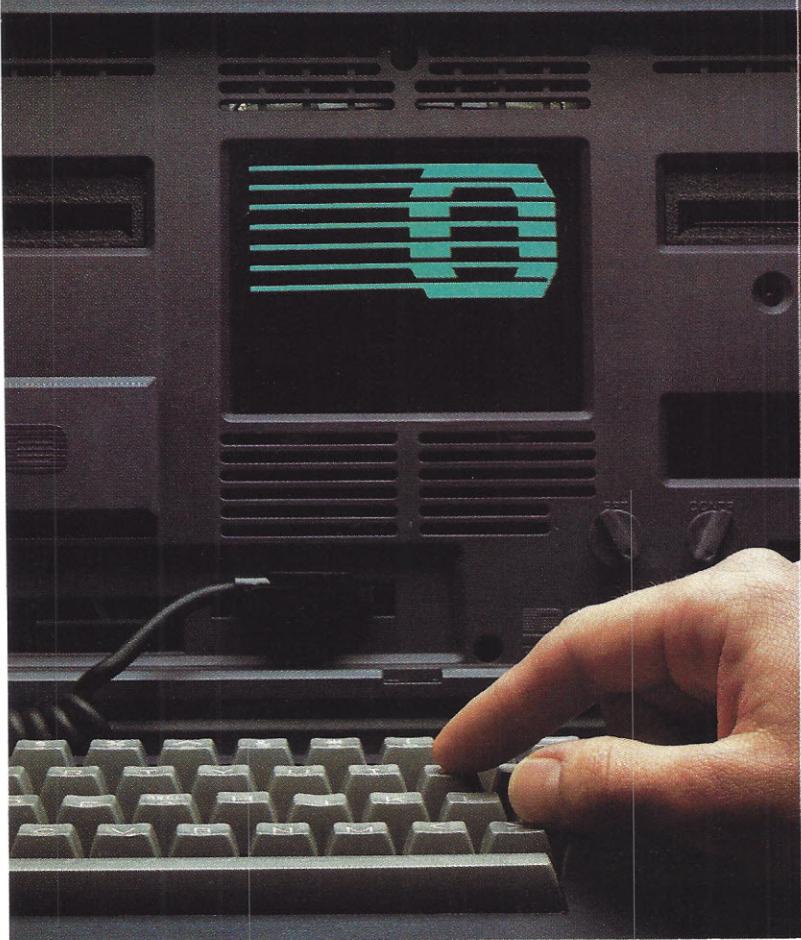
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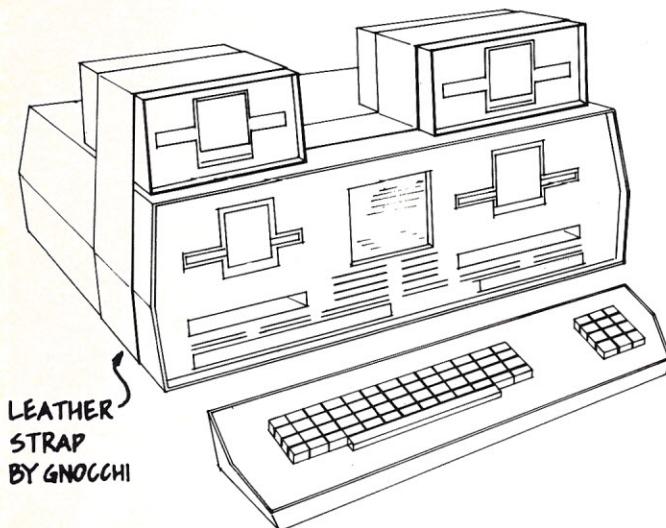
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Making the dot go away

*Transparent applications
in dBaseII*

N. Joseph Potts

One night a couple of months ago, I was making my favorite database do backflips in dBase II on my Osborne when my wife took note of the incredible feats and said, "Boy, it sure would be nice if I could do attendance records for my child-birth classes on the computer..."

It sure would, so I seized upon the opportunity to reveal the wonders of dBase to her. After about five minutes of wonders, however, she stopped me cold, took me by the hand, and said to me with the deepest feeling, "Joe, I don't want a master's in computer science, I just want the computer to help me do my class records," and resignedly returned to her tedious manual index cards.

Wounded to my soul, I sought solace in the little screen of my Osborne, and feverishly built my beloved the slickest set of command files there ever was: screen prompts, error trapping, print formats and all. I designed it so she would never see the accursed dot

prompt of dBase, which she dubbed the "white hole" during her brief sortie into its charms.

Well, almost never. With dBase consuming a minimum of 60K of the 92K available on the single-density diskette, her database and associated command files had to go on the B drive. After answering the sign-on date prompt, she still had to face the fearsome dot long enough to tell it "SET DEFAULT TO B," and then once more to tell it "DISPLAY FILES LIKE *.CMD" to see the command files she had to choose from. Even after I put "DBASE", "SET DEFAULT", and "DISPLAY FILES" on special function keys, she still had to load in the diskettes and then type 1, 2, and 3 in response to the dot.

One night when I saw her following written notes through this thicket of inscrutable prompt symbols, I realized I had to make them all go away permanently, and replace them all with screen prompts. Here's how.

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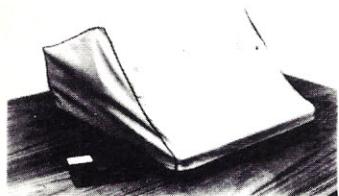
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Invitation to AUTOST

The monitor prompt, of course, is an invitation to AUTOST, which calls the command file. DBase as distributed by Osborne comes with AUTOST on it. Therefore all that's needed is an addition to the load message with the name of the lead command file of this system, which is "OPEN" (see Figure 1).

The process is done using the DDT utility, on the "CP/M Utilities" diskette which came with the Osborne. Both AUTOST and DDT are described in Lesson 3 (Assembly Language programming) of Chapter 8 (CP/M Revisited) of the Osborne User's Reference Guide. This makes CP/M's A> prompt go away, and cranks up the OPEN.CMD command file automatically.

First put a blank, formatted diskette in B drive, WordStar in A drive, and using WordStar type the OPEN.CMD, DEFAULT.CMD, and RETURNA.CMD files onto it. (See Figures 1, 2, and 3.) Don't type the line numbers on the left. They're only there for references from this article. If typed, the commands won't execute. When the files are printed out and letter-perfect, delete the .BAK files which WordStar put on disk. Space will be tight on the final diskette, so don't omit this step—it's worth 10K.

Then take the INSTALLED dBase disk and PIP only the dBase files over onto the diskette containing OPEN.CMD, DEFAULT.CMD and RETURNA.CMD. Don't COPY the disk, because that will bring INSTALL.COM, MAILLAB.CMD, and other example files over which were provided on the distribution diskette. Use PIP B:=A:DBASE*.* and 24K of space should remain. There should be no need to ever re-INSTALL dBase on this diskette, but if so, put INSTALL.COM back onto the disk. DBase runs fine without it, once it is properly INSTALLED.

Then PIP PIP.COM off the CP/M disk onto the new disk, and PIP XDIR.COM as well (this is optional). Next, put AUTOST onto the

```

1: * COMMAND FILE OPEN.CMD FOR OPENING DBASE II DATABASE MANAGER
2: * CALLS DEFAULT.CMD
3: * 5/9/83 N. J. POTTS
4: SET TALK OFF
5: ERASE
6: ***** THIS IS THE BEGINNING OF THE DATE MODULE *****
7: DO WHILE DATE() = '00/00/00'
8:   ACCEPT 'PLEASE ENTER DATE AS MM/DD/YY' TO DATEIN
9:   STORE LEN(DATEIN) TO L
10:  IF L>5 .AND. L<9
11:    STORE L-2 TO L
12:    STORE $(DATEIN,L,1) TO Q
13:    IF Q = '/' .OR. Q = '-' .OR. Q = ' ' .OR. Q = '.'
14:      STORE 0 TO W
15:      STORE 2 TO C
16:      STORE 'NMONTH' TO VARIABLE
17:      DO WHILE C<7
18:        STORE W+1 TO W
19:        IF $(DATEIN,C,1) = Q
20:          STORE C-W TO P
21:          STORE VAL$(DATEIN,P,W) TO &VARIABLE
22:          STORE 0 TO W
23:          STORE C+2 TO C
24:          STORE 'NDAY' TO VARIABLE
25:        ELSE
26:          STORE C+1 TO C
27:        ENDIF
28:      ENDDO WHILE C<7
29:      IF NMONT>=1 .AND. NMONT<=12;
30:        .AND. NDAY>=1 .AND. NDAY<=31
31:      IF NMONT<10
32:        STORE 1 TO LM
33:      ELSE
34:        STORE 2 TO LM
35:      ENDIF
36:      STORE STR(NMONTH,LM) TO MONTH
37:      IF NDAY<10
38:        STORE 1 TO LD
39:      ELSE
40:        STORE 2 TO LD
41:      ENDIF
42:      STORE STR(NDAY,LD) TO DAY
43:      STORE L+1 TO L
44:      STORE $(DATEIN,L,2) TO YEAR
45:      IF VAL(YEAR)>0 .AND. VAL(YEAR)<100 .OR. YEAR = '00'
46:        SET DATE TO &MONTH/&DAY/&YEAR
47:      ENDIF
48:    ENDIF
49:  ENDIF
50:  ENDIF
51: IF DATE() = '00/00/00'
52: ?
53: ? DATEIN+" DOESN'T LOOK LIKE A DATE TO THE COMPUTER"
54: ENDIF
55: ENDDO WHILE DATE() = '00/00/00'
56: *
57: ***** THIS IS THE END OF THE DATE MODULE *****
58: *
59: ERASE
60: ? 'LOAD YOUR DATABASE DISK INTO THE RIGHT-HAND (B) DRIVE'
61: ? ' '
62: ? ' '
63: ? ' '
64: ? ' '
65: ? ' '
66: ? ' '
67: ? ' '
68: ? "AND PRESS <RETURN> WHEN YOU'RE READY"
69: WAIT
70: DO DEFAULT
71: RETURN

```

Figure 1

disk, which I usually do from CP/M after patching AUTOST in DDT (SAVE 8 B:AUTOST.COM). Lastly, SYSGEN the CP/M system from CP/M utility disk onto the new disk.

Be absolutely certain that at least one 2K block of unused space remains on the disk before

using it; the PIP command on line 61 of DEFAULT.CMD requires empty disk space for temporary storage of the commands on that line which follow "QUIT TO". Now put the dBase II diskette in the B drive, the newly created diskette in A, and roll.

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```

1: * COMMAND FILE DEFAULT.CMD FOR CONTROLLING DEFAULT DRIVES
2: * 5/9/83 N. J. POTTS
3: RESET
4: SET DEFAULT TO A
5: SET TALK OFF
6: STORE 'X' TO CMD:FILE
7: DO WHILE !(CMD:FILE) # 'Q'
8:   ERASE
9:   ? 'HERE ARE THE COMMANDS ON THIS DISK:'
10:  DISPLAY FILES ON B LIKE *.CMD
11:  ? 'PAN RIGHT (<CTRL> <-->) TO SEE IF THERE'S MORE TO THE RIGHT'
12:  ? ''
13:  STORE CHR(27)+CHR(41) TO DIM
14:  STORE CHR(27)+CHR(40) TO BRIGHT
15:  ? 'TO DO A COMMAND      '+DIM+'ENTER THE NAME (WITHOUT .CMD)'
16:  ? BRIGHT
17:  ? 'TO TRY ANOTHER DISK  '+DIM+'ENTER X'
18:  ? BRIGHT
19:  ? 'TO QUIT              '+DIM+'ENTER Q'
20:  ? BRIGHT
21: ACCEPT TO CMD:FILE
22: DO CASE
23:   CASE !(CMD:FILE) = 'X'
24:     DO OPEN
25:   CASE !(CMD:FILE) = 'Q'
26:   CASE !(CMD:FILE) = 'RETURNA'
27:   ? ''
28:   ? "RETURNA CAN'T BE SELECTED."
29:   ? "IT'S ONLY FOR USE BY OTHER PROGRAMS."
30:   ? ''
31:   ? 'PLEASE PRESS <RETURN> TO CONTINUE'
32:   ? ''
33:   WAIT
34:   DO DEFAULT
35: OTHERWISE
36:   IF .NOT. FILE('B:&CMD:FILE..CMD')
37:   ? ''
38:   ? "&CMD:FILE ISN'T IN THE LIST"
39:   ? ''
40:   ? 'PLEASE PRESS <RETURN> AND TRY AGAIN'
41:   ? ''
42:   WAIT
43:   DO DEFAULT
44: ELSE
45:   IF .NOT. FILE('B:RETURNA.CMD')
46:     ERASE
47:     ? 'THE DISK IN DRIVE B LACKS THE COMMAND FILE'
48:     ? 'NECESSARY FOR CONTROLLING IT AUTOMATICALLY'
49:     ? ''
50:     ? 'TO COPY THE FILE ONTO THE B DISK, MAKE SURE'
51:     ? 'THE DISK HAS NO WRITE-PROTECT TAB, AND PRESS Y'
52:     ? ''
53:     ? 'OTHERWISE, PRESS N'
54:     WAIT TO COPYDECIS
55:     IF !(COPYDECIS) = 'N'
56:       DO DEFAULT
57:     ELSE
58:       ? ''
59:       ? 'PLEASE WAIT. THE COMMAND IS BEING EXECUTED.'
60:       ? 'THE SCREEN MESSAGES ARE NORMAL.'
61:       QUIT TO 'PIP B:=RETURNA.CMD', 'DBASE OPEN'
62:     ENDIF
63:   ELSE
64:     DO B:RETURNA
65:   ENDIF .NOT. FILE('B:RETURNA.CMD')
66:   ENDIF .NOT. FILE('B:&CMD:FILE..CMD')
67: ENDCASE CMD:FILE
68: ENDDO CMD:FILE
69: ERASE
70: ? ''
71: ? 'TURN OFF THE PRINTER, REMOVE THE DISKETTES'
72: ? 'AND TURN OFF THE COMPUTER WHEN'
73: ? 'YOU SEE "A"> AT THE LOWER LEFT'
74: SET TALK ON
75: QUIT
76: RETURN

```

Figure 2

```

*COMMAND FILE RETURNA.CMD FOR RETURNING DEFAULT TO A
* 1/6/83 N. J. POTTS
IF CMD:FILE # 'RETURNA'
  SET DEFAULT TO B
  DO &CMD:FILE
  DO A:DEFAULT
ENDIF
RETURN

```

Figure 3

How it all works

It isn't necessary to know how all this works in order to benefit from it, but for the curious, the following explanation is offered.

OPEN.CMD is where dBase starts doing the work, and since the invocation of a command file in CP/M (DBASE OPEN, remember?) skips dBase's automatic date prompt, OPEN starts off with a homemade date prompt. Unfortunately, when using the SET DATE TO command (line 46, at the bottom of all those IFs), dBase's admirable date error checking function doesn't work, so lines 6 through 57 of OPEN are devoted to trapping date errors. It isn't as good as dBase's, because it lets you enter dates like April 31, and it never heard of a leap year. Further it forces you to enter a satisfactory date instead of letting you <RETURN> through. I'd suggest using it, an * can always be put in front of lines 6 through 57 later if necessary. (* turns the line into a comment, and keeps it from executing.) By the way, the line numbers on the left are only for reference. DON'T type them in.

The rest of OPEN is strictly for the novice user. It provides a prompt telling the user to load the appropriate diskette into the B drive and press return. The arrow looks a lot better on the screen than it does in type, and it points right at the B drive. Then OPEN calls DEFAULT.CMD, which is where the really heavy stuff begins. DEFAULT is shown in Figure 2.

The main things DEFAULT does besides prompting, error-trapping and error-recovery (90% of the file) is display the command files on the B drive (note the "DISPLAY FILES ON B LIKE *.CMD" on line 10). It then executes a command file on B called RETURNA.CMD which calls the user-selected command file (back in DEFAULT.CMD) and sets the default drive to B. This enables the command files and databases on that diskette to chain around among each other all they like, as long as they always

RETURN to each other, and finally RETURN to RETURNA (Figure 3).

After the selected B command file(s) have executed, RETURNA runs the DEFAULT command file, back on A, which again goes through the sequence described above, trapping errors and providing useful options all along the way. All this convolution is required to go over to the B drive from A and then come back again without giving direct commands to dBase. RETURNA starts out on the A drive, but only for purposes of copying it over to B, which is the only place it can do its job.

DEFAULT checks each B disk for RETURNA (note line 45 and following error message), and if it isn't there, it lets the operator either go back to the main menu by keying 'N', or, by typing 'Y', copy it onto B by automatically exiting dBase, PIPing RETURNA, and re-entering dBase, immediately executing OPEN. This command is on line 61 of DEFAULT.

Goof-proofing

What really makes DEFAULT convenient and goof-proof, however, is its prompting and error-trapping. The first screen, which goes from line 9 to line 21, warns 52-column screen users of the likelihood that a command file is listed off the screen. Above this warning appears dBase's list of the command files on the disk (a pseudo-menu, if you will). Then the main menu offers three choices: name the command, switch to another disk (by keying X), or quit (by keying Q). This looked pretty confusing at first, so I did more programming by STOREing CHR(27) + CHR(41) to DIM and CHR(27) + CHR(40) to BRIGHT. On the next six lines, then, DIM and BRIGHT are used on parts of the menu, and the results are much more coherent. The CHR codes, of course, are Osborne screen-control codes from the *User's Reference Guide*.

The operator's choice is STOREd to CMD:FILE, and the rest of the program is run according to

the contents of this variable. If Q to quit was keyed, execution drops straight down to line 70, where again a novice-considerate display is put up instructing the operator to turn off the computer (and the printer) when the dreaded A> appears at the lower left. This routine actually quits dBase, as no other command file should do. If any other command files actually QUIT, modify them to RETURN, or they'll never RETURN to RETURNA.

If X to switch disks was keyed, OPEN is executed, showing the arrow and inviting the user to put in a new disk, which is then handled like the first one. This is especially useful in cases where the wrong disk is initially inserted. The date routine doesn't execute because a non-zero date is in memory.

Keying the name of a command file from the menu causes the program to go off into three levels of error trapping. The first trap begins on line 26, and checks to see if RETURNA itself was selected (since it will always be on the list of "available" choices). If RETURNA is executed it will call itself, setting up an endless loop of opening files until memory is full and the program crashes with the "TOO MANY FILES OPEN" message. The execution of RETURNA from RETURNA is trapped both in lines 26 through 34 and again in RETURNA itself. Line 34 (DO DEFAULT) is an example of a command file executing itself, equivalent to a LOOP command. Discretion should be exercised in doing this, since this can cause an endless loop not only the way it would in RETURNA, but also if your command file is processing a database and relying on the EOF function to stop. Looping or executing the file from itself can defeat this function, with undesirable results.

If RETURNA wasn't selected, the next trap (lines 36 to 43) checks to see if the selected file isn't in the directory of disk B. If it isn't, it puts up a message which displays the operator's choice and says it isn't

in the list, please try again after pressing <RETURN>. When <RETURN> is pressed, execution loops back to the beginning.

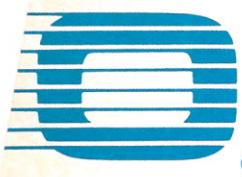
The last trap begins on line 45 and checks to see if RETURNA is not on the B disk, which it won't be the first time this system is run against a command disk. Since RETURNA has to be on the B disk for things to work, it offers to copy RETURNA over to B if the operator presses Y. If it isn't the right B disk, or if the operator is merely uncertain, the N option loops around to the beginning of the program, which offers the opportunity to switch B disks or quit. If the copy option is elected, the system actually quits out of dBase, which puts a lot of messages on the screen which could discourage a first-time user, so a reassuring "wait" message is put up first, telling the operator that all the screen messages are normal, and to stand by.

Finally, on line 64, the system permits RETURNA to be executed, which, in turn, executes the selected B disk command file. If the B command file (and any other command files which it may call) ends in the RETURN command, execution will return to RETURNA. This in turn will DO A:DEFAULT, bringing the default back over to A for the selection of other B commands on the same disk.

Those who've been writing command files in dBase probably don't need this system enough to justify the trouble of installing it. But if others are using the machine who don't have the time or inclination to learn dBase commands, this system can greatly simplify things, improve accuracy, and generally prevent the development of "computer aversion."

And that would be worth the trouble.

N. Joseph Potts, an Osborne owner since March 1982, is president of Small Computer Advisors in Miami, Florida.



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This program interacts with WordStar to add basic math capability to your Osborne computer. Math* performs addition, subtraction, multiplication and division. Within your WordStar document, Math* allows you to perform math functions in either rows or columns. (*Force Two®*)

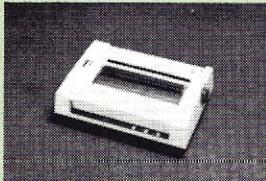
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C. ITOH

Prowriter



Reviewers laud the **Prowriter's** speed (120 cps), the buffer (1.5K), character sets (5 fonts) and graphics (160x144 dpi). The **Prowriter 2** has the same specs, but in a 132 column format. Because delivery is slow nationwide, the **Prowriter** has become "The Printer Worth Waiting For."

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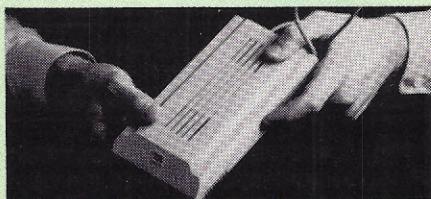


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Reviews

FILER

If you have owned your Osborne for very long, you've probably discovered that your library of disks has an uncanny knack for proliferating. And if you're like me, you spend more time keeping track of what's on your disks than enjoying your Ozzie. *FILER Files Management System* from Compu-Draw is designed to help you.

FILER is a program for archiving and cataloging files in CP/M-based computer systems. In addition, *FILER* incorporates a feature which could soon pay for the cost of the program. If you write many short files, such as BASIC programs, letters, etc., you are not making the most efficient use of your disk storage. This is because files are stored in 2k blocks (DD,1K). If a file is smaller than 2k it still uses 2k of disk space; likewise, if it is slightly more than 4k it will use 6k of disk space. This can soon add up to a lot of wasted disk space. *FILER* is able to retrieve this wasted space.

The files management services of *FILER* are entirely menu driven and easy to use. First you create a VOLUME and tell *FILER* on which drive it is located (*FILER* is entirely memory resident, so you can use both drives for transferring files into and out of volumes). Then you add files to this volume—a process called "archiving" files. *FILER* lets you archive up to 1000 files into a single volume. Files can optionally be deleted from the source disk after they have been archived to the volume. All volumes and the files in them are automatically date stamped by

FILER. You can also add over 100 characters of descriptive text to each file in a volume. This is a great help when you later try to remember what a file called "JOHN2" contains.

If you save an updated version of a file *FILER* automatically assigns a version number. The files in a volume can later be cataloged. This means that *FILER* will print a listing of the contents of a volume to the console, your printer, or any other device supported by CP/M. The listing includes the date the volume was built, the date of the listing, the names of the files in the volume, the version numbers, and the descriptive text for each file. This listing can be sorted by file name, extension (for example, all .BAS files), version number, or a combination of these. The standard CP/M wild card characters ("*" and "?") can be used in any *FILER* operation. Since a volume may contain up to 1000 files, *FILER* allows the files in a volume to reside on different disks. Later when you want to use a file you merely restore it from the volume.

What about that ability to save disk storage space? The nifty part about *FILER* is that by archiving a file into a volume, you are able to retrieve all that wasted disk space. For example, I archived several short MBASIC programs into a volume which I called "Basic." Before archiving the individual files took up 34k of disk space. After archiving the volume "Basic" used only 28k.

FILER is not without its problems, however. Once a file has been added to a volume, there is no way to delete it. This caused a problem when I accidentally ar-

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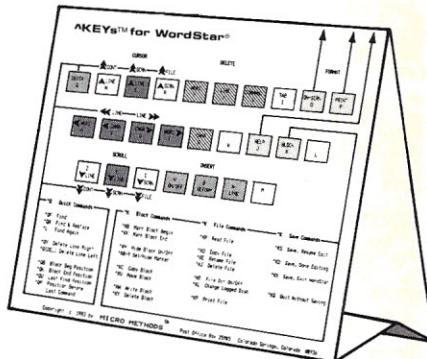
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chived a file (using a wild card match) to a volume. Once it was there I had no way of getting rid of it. I was able to work around this problem by restoring the files, deleting the volume, and then rebuilding the volume from scratch. But this would be a real headache if you accidentally added a file to a large volume. This can also pose a problem if you want to delete an old, unused file from a volume. I contacted Dr. Vasant Saini, President of Compu-Draw, about this problem and he told me that he is currently working on an update to FILER which will allow you to mark files for deletion. This should make FILER a flexible and powerful files management program.

FILER comes with a well-written 60-page user's manual in an attractive three-ring binder. In addition, Compu-Draw provides updates to registered owners of FILER at a very reasonable price. I should add that a short time after my copy of FILER arrived, I received an update which corrected a minor bug. This update was sent at no cost.

At \$49.00, FILER is a good bargain. It is available from Compu-Draw, 1227 Goler House, Rochester, NY 14620 or via SOURCE-MAIL: STE0751.

Sherman Wilcox

Computer Chef

For those who are trying to get their computer widow(er) out of the kitchen and in front of the computer, this may be the program that does it.

Computer Chef is a recipe file and retrieval program that was first mentioned in the October/November "New Products" column. Version 1.0, on one single-density diskette, comes with an easily understood, fully indexed 24-page manual. The diskette includes the Chef program, 74 recipes, and CHEFUNIT.TBL, which stores the ingredients (such as tortilla) that

are not divided when recipes are scaled. The 74 recipes are grouped into four files called RECIPES.1, RECIPES.2, etc.

The menu-driven program's options allow you to select and view a list of all recipe titles that include a particular ingredient, title word, or keyword ("quick," "main dish," etc.). The selected recipe list can be added to or pruned by subsequent keyword, ingredient or title-word choices. (Changing the selected recipe list does not, of course, alter the files of actual recipes.) When a recipe is selected from the list, its measurements can then be scaled up or down to serve a different number of people or to match an ingredient's measurement to the amount on hand.

Here is how Computer Chef works: Family Cook comes home from work and learns from Family Computerist that there is half a pound of hamburger defrosted for dinner, some cheese that needs to be used up, and a computer meeting starting in an hour and a half. If you are Family Cook, what do you do?

Boot up Computer Chef. The program's menu asks whether you want to search recipes for a keyword, ingredient, or title word; let's say you answer with "a" for keyword (the sequence of a series of selections and prunings doesn't matter). Chef then asks, "what keyword?" You type "Quick." Chef searches its disk (40 seconds on double density), says in its friendly syntax, "Try one of these recipes" and lists 15 recipes that include "quick" as a keyword. Friendly Chef immediately follows this with "Or you may" and lists several options including "add more recipes," "prune this list down," and "search another disk." You select "prune this list down," which brings up another list of questions. One of them allows you to delete all recipes that don't include a particular ingredient. You select this and answer Chef's "Which ingredients?" with "ground beef." Zip! Now you have only three recipes to

select from. Another pruning narrows it down to those that call for cheese. Any keyword/ingredient sequence for "quick," "ground beef," and "cheese" gives the same results.

You select one of these by its number and voila! the recipe appears on the screen. But it serves four and requires one pound of ground beef and there are only two of you and a half pound of beef tonight. So you go to the end of the recipe where Chef again displays several action options, one of which is "Revise it for different amounts." You select this option, answer Chef's questions as to which amount to change, and get the same recipe displayed with all measured amounts scaled down to a half pound of ground beef or to serve two.

You can add your own recipes, disks and disks of them, since Chef will search one disk after another and add to or prune the list of choices already selected. The system seems unlimited. You add and edit new recipes using Chef's detailed instructions and any text editor, such as WordStar, in the Non-document Edit mode.

In my opinion, Chef is an excellent beginner's program. With its easy-to-read menus that require mostly one-letter answers, it requires neither a great deal of computer knowledge nor much typing skill. There are a few areas, though, that might be confusing to the beginner.

In the "it-would-be-nice" department:

- It would be nice if the otherwise excellent manual gave at least minimal instructions for editing CHEFUNIT.TBL and Chef-supplied recipes. You can edit both—change the ingredients, add other keywords, and add your own comments—by calling the CHEFUNIT.TBL or the recipe into WordStar's Non-document Edit mode. That is...when you finally locate the individual recipe in one of Chef's RECIPE.# files. Because the manual also doesn't include a

list of Chef recipes by RECIPE.# file name. This will present no problem to those who will always use the Chef-supplied recipes as they come. But some may want to use Chef's excellent keyword scheme to add nutritional values, calorie counts, or other keywords to the Chef-provided recipes. I could find no quick way to extract and list only the titles of the recipes included in each RECIPE.# file.

- It would be nice if Chef had a provision for interrupting a search. If you answer incorrectly, you set off a 40-second (or longer, if you have a second disk in) search you must wait through until Chef tells you "we don't have any of that" and asks for another choice.

One item in the "holy-schmoly-what-do-I-do-now?" department: The Chef disk comes without an operating system, but the manual includes instructions for adding one. Other CP/M and Heath/Zenith users are instructed to add the system by using SYSGEN, but for some unfathomable reason, Osborne 1 owners are specifically instructed to use SETUP. The system can't always be copied with SETUP as it can by SYSGEN—case in point: double density. True, Computer Chef came out before Osborne double density, but sticking to the usual (SYSGEN, in this case) would have covered all possibilities.

I've been pretty exacting in my expectations just because I think this is such a good beginner's program. Overall, I think Computer Chef is an excellent, well-done piece of software that is quite easy to use. It comes with a good manual that has fairly minor deficiencies. And it is certainly priced right at \$29.95. Chef is available from Software Toolworks, 14478 Gliorieta Drive, Sherman Oaks, CA 91423.

Barbara E. Sack

\$9.95

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FLASH!—Works Great with Screenwriter Program Published in April/May Portable Companion, Pages 54-55.

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New Products

Timmm-ber!

Land owners and forestry consultants may have cause to use two related programs by consulting forester Thomas Gaman. **Factual** and **Appraise** both run in CP/M on Osborne 1. Among other applications, Gaman claims Factual will stand volume tables in pulpwood cubic feet, volumes and board foot volumes, process plots using any prism factor or a 100% marking tally, and uses standardized data collection techniques (compatible with Purdue System and TVA's woodplan).

Appraise will value all species totals for a property of given acreage given local stumpage values. All programs are written in Microsoft BASIC and are available with source code.

Thomas H. Gaman,
Consulting Forester
P.O. Box 674
Wingdale, NY 12594

Telling time

A **real-time clock/calendar** for the Osborne 1 is now available in two versions from JG Communications. Battery-run circuitry and included software allows access to time, date and day of week through CP/M, MBASIC, SuperCalc, WordStar and MailMerge. Utilities include programs to start, stop, or interrupt programs at a specific time, and a clock display program.

The clock plugs inside the IEEE 488 port. No tools or special knowledge are required, and the Osborne warranty is not affected. Model RT-60 is for those who occasionally use the IEEE port. Reg-

ular users of Centronics parallel or general purpose port should order the RT-60A, which has an output connector and extra circuitry that allows the port to still be used without unplugging the clock. Both models are compatible with single or double density systems.

RT-60 is \$69.95. RT-60A is \$89.95. Shipping and handling for either unit is \$5.

JG Communications
2025 S. Craycroft, Suite 217
Tucson, AZ 85711

Interface cable

A **comprehensive interface cable** line including support for Osborne, Apple and IBM and other computers has been announced by Computer Accessories Corporation, connecting with a wide variety of printers, modems, plotters and other peripheral products.

Each cable is individually boxed with setup instructions for the appropriate computers and peripheral. The product utilizes an expandable catalog with individual cross-reference sheets for product selection. Each is warranted for five years, and delivery time is 24 hours.

Computer Accessories Corp.
7696 Formula Place
San Diego, CA 92126

Choice software

Parents' Choice, the influential review of children's media, has initiated a regular column **reviewing software for children** from preschool through junior high.

Reviews will be written by C.

Michael Curtis, senior editor of Atlantic Monthly, as well as by other distinguished journalists. A list of "Parents' Choice Recommended Software for Classroom" will accompany. Write to Maggie Russell or Claudia Dunne, % the magazine for more information.

Parents' Choice
Box 185
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Sci-Fi mindbender

"The challenge was issued eons ago from light-years away. And only you can meet it." That's the come-on for Infocom's first INTERLOGIC science fiction "mindbender" called **Starcross**, looking spiffy packaged in a white and silver flying saucer.

Starcross is the name of your ship, and you are cruising the galaxies in the year 2186 in search of black holes, an energy source for our ever burgeoning civilization. Of course you meet with things other than the object of your search...

This "prose adventure," which takes commands in English, is available from Osborne dealers for \$44.95 suggested retail.

ARITHMATECH for kids

Parents with Osborne 1s can now try a new software package designed to help children master skills in math. ARITHMATECH, by MC Services of Philadelphia, is called "extremely user-friendly" and offers addition, subtraction, multiplication and division problems ranging from single-digit addition to complex division. All variables are user-controlled.

Cost is \$79 for either single or double density drives, with complete documentation.

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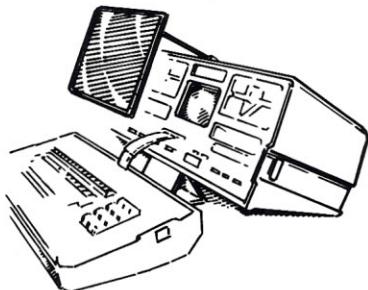
LANGUAGE DRILLS—(Available Soon) French, German, and Spanish tutorials for the beginner. Cost...\$24.95

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DEALER INQUIRIES INVITED

Letters

Continued from page 11
double density will receive their copy of the P-System.

Statements about the specific features of the 80-column upgrade were projections on a future product and were correct at the time they were published. However, during the development of new products, many trade-offs occur. We removed those features to enable us to sell the upgrade for half the original amount. Once again our goal was to deliver a product that satisfied the most wanted needs of the marketplace for the lowest possible price. At the official announcement of SCREEN-PAC, and in the product brochure, we specified all the included product features. We apologize for creating any false expectations.

Thank you for your patience and continued support.

Jim Schwabe
Product Manager, OCC

Sunstruck Aaron

Peter Aaron's article in the April/May issue of the *Portable Companion* was quite amusing but I believe that he has been "out in the sun" a bit too long! I can't conceive of my Osborne 1 in a more hostile environment than the moist, salty breezes and the blowing sand at the beach. (I wonder how well I'd fare with my computer on a whitewater rafting trip?) Have you ever tried to eat a sandwich at the beach? Disk drives don't like to eat the sand-which-is there either, and floppies hate the sun.

Communing with the silicon particles from which it was born is not my computer's idea of a fun time. Thanks, Mr. Aaron, when I go to the seashore, the computers—and the business suits—stay at home.

Randy Hickman
Monterey, CA

Discrepant references

I read with interest David Kline's article "Syndicating with your Osborne" in the Apr/May issue of the *Portable Companion*, but I noted several discrepancies in his references to filing to newspapers.

For starters, he (or someone) got two of the six names of front-end systems wrong. It is Talstar, not Telstar, and CSI (Composition Systems, Inc.), not PSI.

As for Talstar, the system could hardly rank among the most common—the company, now out of business, had only seven major dailies as users of its T-4000 system. Several other papers used the smaller T-410 system for editorial work, but Talstar folded before realizing its potential as a major systems vendor.

To the best of my knowledge only the Toronto and Honolulu papers are keeping their T-4000s; the rest of us are in the process of acquiring or installing new systems.

Kline's reference to sending to an Atex system is close but not complete—the Atex system requires both a queue and group designator to route copy properly and will dump the file to a default queue if the information is missing. It's still recoverable, but if the editor you're sending to doesn't have access to that queue, it's inconvenient.

Kline also should have cautioned writers to put their own {ET at the end of the story, lest it hang in the system until someone sends something to force the end-of-text and bump it out. If the story is received on a little-used incoming line, this might take hours.

I also question his references to filing to a Talstar system; the procedure is by no means "exactly the same" as filing to an Atex.

The Talstar can route incoming wire only by single-letter ANPA category and priority codes, and sending a header string such as {QUWIR would almost certainly send the story off to a default queue—if the system accepted the story at all.

Again, the end-of-text marker is necessary or the story will hang until it is bumped out by an incoming story, often with unpredictable results. We have experienced many strange happenings when the proper codes were left out—stories would merge with other stories, be sent to queues they were never intended for or simply wind up scattered all over the system.

Few editors have the time to search through an entire system—usually several hundred queues—and to piece the story together again. A couple of experiences like that will guarantee you a place on their nuisance lists.

My point is that electronic transmission to newspapers' front-end systems is indeed a fast and efficient way to get your material to an editor, but it isn't quite as simple as Kline makes it sound. Each system has its own protocol and that protocol must be followed exactly, or you may find your work is useless

to an editor when, or if, it is received.

As Kline correctly said, but did not stress strongly enough, check with your intended receiver before you send and make sure you know what you're doing. You'll probably need several test transmissions to get things right, so create a few short test files ahead of time. It could save you, and the editor, a lot of grief.

William J. Jecusco
Systems Editor,
Jackson Newspapers
New Haven, CT

David Kline replies: Jecusco's comments are on the mark, which further indicates just how new and confusing this whole business of electronic submissions still is. I wish every other systems manager knew as much about this process as Jecusco.

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A compact work station for your Osborne

Kenneth E. Panck

Not long after purchasing my Osborne 1, an Okidata printer and a Zenith monitor, I realized that most of the surface area of my faithful old wooden desk was occupied by my new hobby. Since floor space in my rather cramped study was at a premium, I cast about for an efficient solution to my dilemma. The solution was a compact work station that accommodates my Osborne, printer, paper, monitor, Modem, 2 lamps, file cabinet, diskette files and manual. The work station occupies less than 6 square feet (5.75 to be exact), and measures 34.5 inches by 24 inches. It is 57 inches high when fully loaded with monitor, disk files, etc.

I was able to build my work station for about \$75.00. You may be able to do better or worse depending on how much you can scrounge up around your garage or shop. I didn't have to purchase one of the lamps, so was able to save money there. Also, I found most of the necessary hardware

and all of the stain and varathane to finish the work station around the house, left over from other projects.

For those of you that own the current version of the Osborne 1 with the air vent in the top, a muffin fan is easily incorporated in the design of the work station. I found that operating my Osborne for several hours at a time led to BDOS errors. Since the Osborne slides underneath the top shelf of the work station, heat tends to be trapped under the shelf. Mounting the fan in the top shelf directly over the air vent completely eliminated any problems.

The portability of the Osborne is preserved with this work station since the unit can be easily removed by disconnecting the monitor and printer cables, folding the keyboard up and sliding the Osborne out from under the top shelf. Don't forget to plug the video shunt back in. An AC outlet with 6 receptacles, an on-off switch and a circuit breaker mounts underneath the bottom shelf. This makes turning



For those with thin legs and thick files, the station can also be used to stash a two-drawer cabinet.

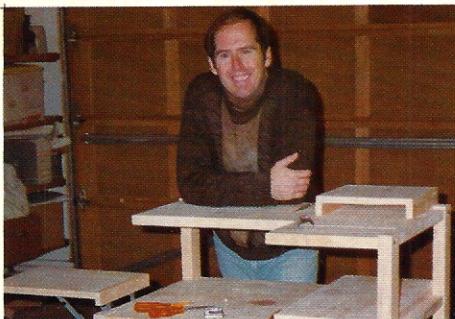
the work station on very convenient. Three hardware hooks are also mounted underneath the bottom shelf so that the AC power cords can be neatly stowed. In the interest of portability, however, you may consider leaving the Osborne's AC cord separate from the rest to facilitate its removal.

In addition to the top and bottom shelves of the work station, which accommodate the Osborne, printer and monitor, three other shelves are featured (see photos). The first of these is a fold-up shelf mounted on the left-hand side of the work station. When stowed or folded down, it contributes to the compactness of the station. When up, it provides a handy place for reference materials while working at the keyboard. The second shelf is directly underneath the keyboard and is very useful for storing often-used reference materials such as the *User's Reference Guide* provided with the Osborne. The third shelf slides out on the right side of the operator. It is actually underneath the paper supply for the printer. This shelf is for taking notes or placing diskettes and other materials while using the work station.

A slot cut into the top shelf of the work station allows paper to be fed to a printer from the bottom. Paper can be conveniently loaded from the bottom and fed through the printer to the paper tray placed behind the printer. This tray also allows the power cord and the RS-232 cable from the printer to be fed under it so they don't interfere with the paper as it exits from the printer.

I store my diskettes in small plastic disk files that are commercially available and hold about 40 diskettes. Depending on the size of your external monitor, if you own one, you may be able to construct a shelf unit behind the monitor to store your diskettes. I was able to build one to accommodate two of the diskette files mentioned above.

I used commonly available materials and hand tools to build the work station. Besides the normal hand tools, a skill saw, sander, saber saw, and drill motor came in handy. The saber saw is necessary for cutting the hole in the top shelf to mount the fan behind the monitor. Table 1 contains a list of materials used in construction of the work station.



Kenneth Panck shows off the basic structure of his compact work station.

Construction Materials

1. Lumber
 - A. Laminated Pine (1 1/8 x 24 x 8')
 - B. 2 each Fir 2 x 3 x 8'
 - C. 1 each Pine board 1 x 12 x 8'
 - D. Small pieces of 1/4" Plywood
 - E. Small amount of 1 x 2 Fir
2. Hardware
 - A. Latching hinges for lift-table
 - B. Small handle for slide-table
 - C. L-shaped bracket for lamp
 - D. Bolt for lamp
 - E. Socket for lamp
 - F. AC switch and cord for lamp
 - G. Finishing nails
 - H. Lag bolts and washers
 - I. Purchased spot-lamp
 - J. Muffin fan
 - K. AC Outlet/AC Switch for Work Station

Table 1



The specifics

I used laminated pine boards for the top and bottom shelves of the work station, but if you can't locate this material, plywood works just as well. Fir 2 x 3's were used for the legs of the work station, and were anchored by lag bolts and washers to the top and bottom shelves. I recessed the lag bolts and painted them black to make them look more attractive. I used 1 x 12 pine for both the slide shelf and the lift shelf. The latching hinges were used on the lift shelf. The 1 x 2 fir pieces were used to trim the lift shelf and for the slide table assembly. The 1 x 2's were trimmed down to 1 x 1 dimensions to provide clearance and act as guides for the slide table.

The lamp over the slide table was constructed of plywood and commonly available hardware such as a light socket, switch, L-bracket, cord, etc., but you may choose to purchase one. I did buy a spot lamp for use on the left side of the monitor to illuminate the keyboard.

Both the Osborne 1 and the new Executive series can be accommodated by this station since the external dimensions for all these machines are the same.

One optional aspect of the work station was to make it high enough to enable a two-drawer file cabinet to be placed underneath. This places the external monitor directly in front of your eyes, but the keyboard is a mite too high. If your work station does not include a file cabinet you may consider making the station somewhat lower. I have worked for hours on my station with no discomfort, however.

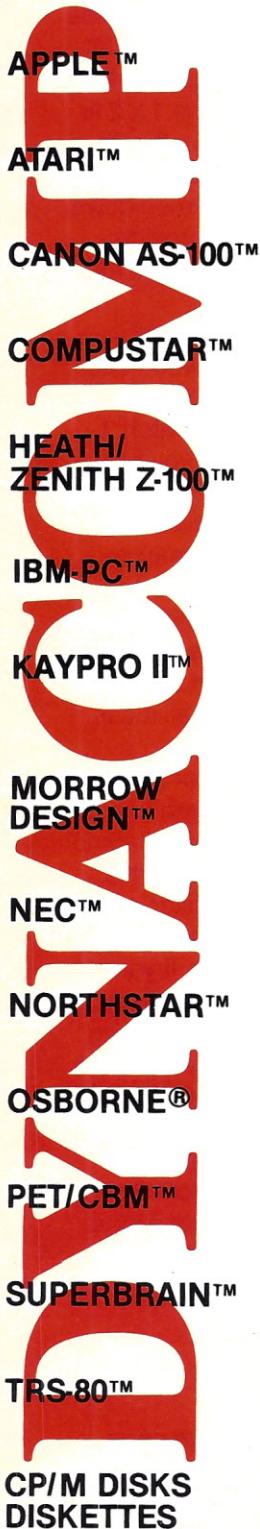
I would be happy to provide detailed plans for the Work Station to those who are interested for a small charge: 20366 S.W. Carlin Blvd., Aloha, Oregon 97007.

The work station in all its attendant glory.

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Puzzler

In the August Puzzler we challenged you to figure out the mathematical logic and strategy of a game called NIM. To refresh your memory, the game is played by placing four rows of match sticks in groups of seven, five, three, and one. Two players take turns picking any number of sticks from a single row; an entire row can be picked.

Using the Osborne 1 and binary theory, we came up with the following winning combinations. Once a player has left the board in any of the winning positions shown, it is impossible for him to lose as long as subsequent moves leave a winning combination. The player moving second has the advantage as there are no automatic winning first moves.

Each number represents the number of sticks left in a row after your turn. For example, 541 shows the board looking like this:

|||||
|||
|

The rest of the winning combinations are:

7531	2211	111
7421	752	55
6521	743	44
6431	653	33
5511	642	22
4411	541	1
3311	321	

Whoops

Sackcloth and ashes

Several errors crept into the July 83 issue of the *Companion*. On page 19 of the *Wizard* column, the correct phone number for Advent Products (manufacturer of the Os-baud device) should be 714-997-0800. (The address and phone number are listed correctly in the product review on page 85.)

In the same column on page 21, a question came up on how to redefine the keys for the Dvorak keyboard system. My answer involved using an EPROM burner to reprogram the monitor ROM. That pro-

cess is correct, but needlessly difficult in light of what was recently brought to my attention.

Heritage Software, I am informed, publishes a \$60 program called SmartKey that redefines any keyboard key; one obvious application is Dvorak keyboard arranging. Another application is to create additional programmable function keys. Heritage was good enough to send us a copy for our review along with a note stating SmartKey II is coming out soon (available by the time this is pub-

lished). For further information contact:

Heritage Software, Inc.
2130 So. Vermont Ave.
Los Angeles, CA 90007
(213) 737-7252

One final rectification: for those of you who tore out your hair looking for Figure 5 in the July issue's SuperCalc double-header, look no further. The summary figure is listed here. Sackcloth and ashes, anyone?

Figure 5

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Next Time

If you think this was good, wait until you see what's coming up in the October issue of the Companion:

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Wrap-Up

Not-so-vital information

We heard about three unusual incidents involving Osborne 1 computers and thought we should pass them along in the hopes that future problems could be avoided.

- Be cautious about very high speed data transfer. One member of this group was downloading a file from his Osborne into a Cray-1, and the data apparently was transferred so quickly that a vacuum was created inside the O-1 which resulted in an implosion and some superficial facial injuries. (He was struck by some flying microbits.)

The O-1 involved is now a mass of plastic and broken chips about the size of a fist.

- Another member was driving to work while at the same time running a SuperCalc worksheet to calculate her auto insurance premiums. While engrossed in her calculations on the battery-powered O-1, she smashed into a parked car, totalling both vehicles.

Remember: If you must compute, don't drive. If you drive, don't compute. Computing and driving don't mix.

- Along the same lines, never submerge your Osborne 1 when cleaning it. The water gets inside and can create a shock hazard. And never use your O-1 while bathing or showering, unless you have SUBMERGE-PAC.

Our unlucky victim's WordStar file read, "Well, here I am in the tub, writing you this 71.30; p6b5 0"[5=7vB n"] 1=5\$7bn kdjfk f \$3#@) fpd aaaaaarrrrrgggg"

Many thanks to TCOG, the Twin Cities Osborne Group, for this vital information.

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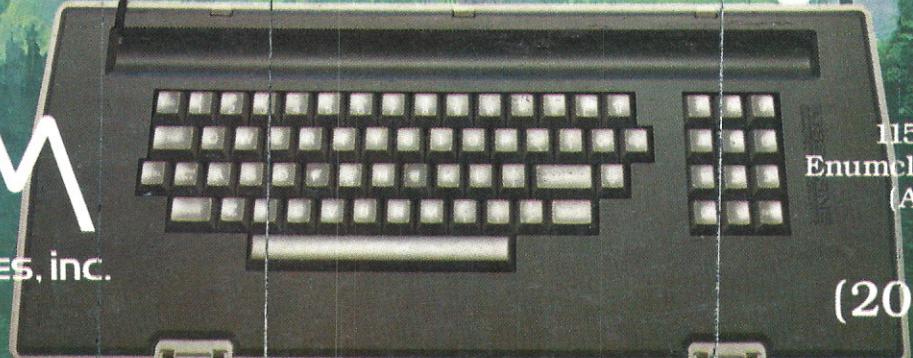


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